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Volume 49
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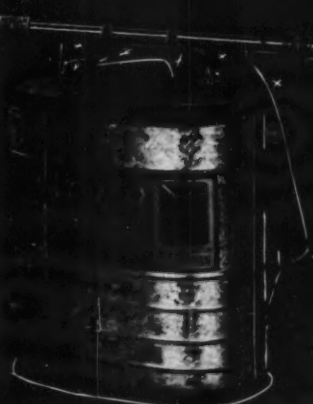

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Photo by Western Pine Association.

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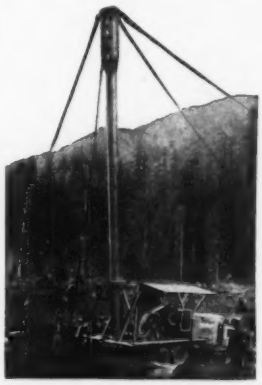

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Journal of Forestry

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Relations of Forest Management and Economics[1]

Leonard I. Barrett

Chief, Division of Forest Management Research, U. S. Forest Service, Washington, D. C.

A COMMITTEE of the Division of Forest Economics is currently engaged in an effort to define the scope of its activities, particularly with relation to research. For purposes of this discussion we can accept as the field of economics the 21 general categories of study reported by the Society's committee on Scope and Method of Research in the April 1949 issue of the JOURNAL OF FORESTRY.

Perhaps those who specialize in the older phases of forestry have not felt the need of redefining their fields. However, it does seem that current thinking attributes to silviculture, for example, a wide variety of responsibilities not included within the basic concept of that field. For example, there are many who include within their working ideas of silviculture the notion that it also involves mensuration, regulation of the cut, and most everything else labeled "forestry." The interchangeable use of the terms "silviculture" and "management" is accompanied by a high degree of mutual misunderstanding. I continually find myself engaged in discussions involving one or the other of these terms only to find eventually that the parties involved are debating two separate subjects altogether. So without too much reference to existing terminologies, and with the hope of clarifying our discussion of relationships, let me offer three definitions.

Silviculture is the process of regeneration and culture of forest crops. It is based on natural laws and must give primary consideration to biological relations and reactions. Included are those of a relative short-time nature and also those long-time ecological considerations necessary to perpetuation of forest types or their most valuable components. The basic silvicultural system and method of practicing it must conform to the biological requirements of a given species or type. Failure to make a wise choice here will eventually result in failure to attain long-time economic benefits.

Regulation is the scheduling of the rate and volume of harvest and intermediate cuttings so that the ultimate objectives of the forest manager are reached for a forest property in the shortest practicable time. The bases of regulation are mathematics and professional judgment. Here miscalculation or lack of sound judgment may have equally serious results. With both silviculture and regulation having an important bearing on attainment of management objectives, it is perhaps unfortunate that our professional training approaches silviculture and regulation as separate specialties without too much attempt to bring them together. Some of our most difficult problems in management seem to arise from the need to give proper weight to each of these important specialties and thus effect a balanced and workable pattern for reaching a management goal.

Management is the integration of silviculture and regulation plus those economic considerations pertinent to a specific area that will assure attainment and stability of the objectives of the manager. Where commodities or services other than timber are to be produced, such as water, wildlife, or recreation, then additional specialties are encompassed under management and must be integrated with timber growing. Thus we see that forest management must integrate the principles of silviculture, regulation, economics, and other pertinent fields. This means that the need of mutual limitation must be recognized and that balanced compromise between fields is an essential process in forest management.

We have already seen the results of a lack of balance. Short-term economic considerations which have been typical of so much past forest use result in liquidation, pure and simple. Selection methods based only on the economics of the immediate logging operation and the assumption that a little tree will always grow where a big one is cut leads to high-grading in many types and subsequent deterioration in growth and composition.

The results of applying only pure silvicultural theory to forest management can be found only in conjecture. There are no practical examples of such management since forest managers have simply rejected any silvicultural proposals not accompanied by economic considerations.

The scope of economic inquiry as it is emerging from the current survey by the Division of Forest Economics seems to indicate three distinct levels of relationship between forest economics and forest management. These levels differ in their degree of intimacy with the current problems of the forest manager, but all levels are of extreme importance to him in the long run.

[1]Paper presented at a joint meeting of the Division of Forest Economics and the Division of Silviculture, Society of American Foresters, Washington, D. C., December 15, 1950.

The first of these levels and the most distant from day to day management problems are the categories of economic study which attempt to penetrate the future. These include (a) forecasts of demand, consumption, and requirements for timber products, (b) similar estimates for non-timber resources that flow from forest lands, and (c) planning, policy, and theory. Although there is often immediate use for such economic studies based on current conditions, perhaps the greatest need exists for defining as clearly as possible what the long-time future trends will be.

Many major decisions in public and private forestry are being made on a very long-time basis. Planning ahead for 50 or 100 years is not exceptional. Here there is need for the soundest forecasts that can possibly be made regarding the economic climate in which the forest manager will be operating one, two, or three generations hence.

In the older European countries the forest manager is not competing with ownerships engaged in liquidation of forest resources. All his competitors are incurring the costs of timber growing. Stumpage represents 60 to 70 percent of the total cost of a product rather than the 10 to 30 percent current under our conditions. Reforestation costs ranging from 5 to 10 times our own are not considered unusual. Usually the volume of the budgeted cut from a forest consists of 50 percent thinnings and improvement cutting and 50 percent harvest cuttings. Highly profitable thinnings are made in stands 15 to 20 years of age. These are all indications that the European forest manager operates in an economy where his products will sell at prices which include profit and all the cost of an intensive technical forest practice. Do present trends indicate that the forest manager in this country will ever operate in anything like this kind of economy?

In asking forest economists to undertake these long-range predictions we assign a most difficult task. He will of necessity sometimes work far afield from forest resources and must inquire into the whole field of economic development, both here and abroad. What were the economic developments that led to the European forest managers' present favorable situation? From this viewpoint perhaps the scope of economic research in this country should be broadened to include study of trends and developments on a world-wide basis. Those now engaged in making long-time management decisions could find much help from forecasts of what the future situation may be with respect to forest resources.

Closely allied to this prediction type of inquiry is that which would reduce the large number of intangible values with which the forest manager now deals. Water, wildlife, and recreation are benefits in addition to wood which flow from forests. The economic relations of these benefits to forest management are vague. For the most part we feel their social and economic importance but have difficulty in placing even approximate values on them in tangible terms. The forest manager cannot go to an organized market to seek sales of these intangible values. The general public interest is his customer. Public acquisition, public subsidies to private owners to pay for the cost of action programs, and reforms in legislation have all been offered as answers to this problem. An incentive, similar to that existing for wood products, is needed. If the forest manager has either a responsibility or an opportunity with respect to such products, a clearer understanding of their economic importance is necessary to build the legislative and social framework that will provide for meeting such responsibility or realizing such opportunity.

By far the greatest amount of economic effort under way comprises a second level of relationship to the forest manager. Included here are forest resource surveys, studies and surveys of the several industries, ownership, marketing, prices, taxation and insurance, current demand, consumption, and requirements. These studies help to define the contemporary economic situation in which the forest manager works and are helpful mainly in decisions affecting current operations. Here there is perhaps danger that our involvement with problems of the day will result in disproportionate attention to them at the expense of long-range analyses and forecasts.

The third level of relationships, and the closest, is involved in such phases as costs and returns of forest management. In this field sharp lines of division between economics and management evaporate and the two become so closely associated that attempts to define what is economics and what is management become impossible. The forest manager must correlate a knowledge of many special fields and seek the best balance among them all to attain his objectives.

The intensity of silvicultural practice must be determined by both its biological and economic soundness. From an economic viewpoint there are two broad categories of silvicultural measures. First, those operations which return an immediate profit, and second, those where the operation constitutes an investment with a deferred return. Opportunities for immediate returns from silvicultural improvement cuttings have developed rapidly in recent years. There are many localities in the United States where markets now exist for small products such as pulpwood, mine timbers, smelter poles, excelsior wood, and others too numerous to mention. These markets make possible thinnings and other improvement operations without "out of pocket" cost to the owners and offer satisfactory returns on the operation. We are collecting much information, both from experience and research, along these particular lines at the present time. However, much of this information relates only to the costs and returns phases of a single operation and does not examine the possible profits or losses in respect to future income of the forest.

With respect to the second category of silvicultural measures, i.e.,

deferred income investments, we have progressed further in appraising the biological aspects than we have in considering their economic implications. We are familiar with planting or with large areas of young growth too small to produce any saleable products, but which we think will compensate in increased growth rate and improved composition if such silvicultural treatments as weedings and cleanings are used. Returns from this kind of expenditure will vary widely with site, species, and the stocking left after treatment. The economic aspects of these investment operations are in many respects the more complex of the two economic types of silvicultural measures, and little progress has been made here.

A host of other problems arise when we think of forest management as a growing, dynamic enterprise. Methods of determining economic maturity of forest trees and stands are yet to be developed. Economic appraisal of various regulation alternatives with respect to types of ownership is of increasing concern. For example, is regulation of the cut for periodic income every 5, 10, or more years the best economic alternative for the farmer and small owner, or would he profit more to regulate the cut for stable annual income? What are the best alternatives of this kind for various types of ownership?

A highly important need is the over-all appraisal of forest properties as business enterprises. The forester has a long way to go in establishing the economic position of forest land management. He is in a poor position to rate the forest enterprise with other competing uses for the same land.

Whether it is a responsibility of the forest economist or other specialist to make such economic appraisals is perhaps beside the point at this time. The survey conducted by the Division of Economics has shown that a rather large number of economic studies are under way but that only a small proportion of them are conducted by forest economists. Those who have commented on the report have wisely taken the viewpoint that this is not particularly disturbing. However, the situation does point up a major need in the relations between forest management and its branches and economics. Since many who are struggling with economic appraisals are without formal economic training there is risk that a good many sins of omission and commission will be involved. Perhaps the most important thing that the forest economist could do in this connection would be to provide the basic principles and the guides which would enable the specialist and the forest manager to do a better job on the economic aspects of these problems.

At this third level of relationship, where the forest manager and the economist are most closely associated, the prime consideration is a recognition of need for proper balance between the two phases of forestry. The end we seek is a sound, aggressive growth of forest management as an enterprise that stands on its own feet in meeting its share of responsibility and opportunity within our social, political, and economic framework.

NORWEGIAN GRADUATE FORESTERS studying in the United States in a cooperative program sponsored jointly by the American Forestry Association, the Swedish Embassy, and U. S. industry. Tore Gore Aas, *left*, and Sverre Tore Hoel, *right*, are studying timber production methods at the Vail, Wash. plant of Weyerhaeuser Timber Company. Harald Wilhelm Aarstad, *center*, is making similar studies at Southland Paper Mills, Lufkin, Tex.

Opportunities and Needs in Range Management[1]

Vernon A. Young

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IT WOULD SEEM REASONABLE to assume that range management began as a science on the American continent with the introduction of livestock in 1515 in old Mexico. It was not, however, until approximately 400 years later that a few range conscious pioneers warned the public through their writings that proper range management practices must be introduced and maintained if the native grasslands and mountain watershed ranges in the western United States were to survive. They also stated that the over-utilization of "key" bunch grasses, with deep and widespreading root systems which bound and held the soil and permitted the water from the snow and rain to percolate into the deeper soil layers, were rapidly being replaced by the more superficial rooted grasses of lower forage value.

However, it was not until 1934, with the advent of the dust bowl, that the general public realized that the management of the native grasslands called for the same skill in management that perennial forage crops required, if the grasses were to protect the soil from erosion and produce a sustained forage yield. Ranchmen and livestock producers also became cognizant of the fact that range abuse had introduced an environment over much of the range lands of the 17 western states favorable for the establishment of poisonous plants, noxious brush, and undesirable grasses and forbs. They also recognized that such a state of affairs had a rather profound effect on their economic adjustments.

Today, even the urban citizens in many areas have become alarmed, and rightfully so, concerning the future culinary water supply because of the low stream flow following the spring freshets and the greatly lowered watertable as compared with the past. These, together with range management information that has been disseminated during the past 15 years by government, private agencies, educational institutions, and others interested in wildland management, have stimulated sufficient interest that the general public and especially ranchmen and livestock producers, to such a degree that guided action is now necessary. Thus, the opportunities for enlightening the public in this large and important field are many, and must be extended rapidly and extensively with both old and reliable methods as well as the introduction of new ones.

Need for Education

The major opportunities that lie ahead are the advantages offered through education and field application. They are teaching, research, and extension. How well the principles, the methods, and facts can be obtained, organized, and disseminated depends on how well these divisions are coordinated in an over-all program.

The first need is for more departments of range management in educational institutions which are properly geographically located in relation to large range areas, where young men may be adequately trained in this field for professional positions, ranch managers, and operators of their own ranches. For too long a period one or two range management courses have been offered in the curriculum of either forestry, animal husbandry, agronomy, wildlife management, or botany, by instructors not adequately trained for such instruction. As a result students interested in range management who come under such an environment do not generally develop the range psychology and efficiency as do students taught under a range management curriculum. Furthermore, it is a decided advantage to any state, with considerable range and pasture lands, to support a range management department in one of its educational institutions because of the range atmosphere and influence that is radiated to the ranch population.

The range management curriculum in any given institution should include besides the regular standard range management courses, one or two courses adapted to their particular environment. However, such basic courses as mathematics, chemistry, soils, range ecology, plant physiology, statistical analysis, and genetics must be greatly strengthened. Certain social science courses seem pertinent in a range student's training since he is obliged to work with ranch people and in rural communities. Much emphasis should be placed on field laboratory exercises of given standard management courses and as a final strengthening factor a field course should be required which would touch most of the range and research problems in a large area. Such a curriculum would better prepare range graduates for a greater appreciation of technical and applied research and may be a means of providing extension information and assistance to ranch people.

Today, there is a place in the field of range management for the degrees of Master of Science and Doctor of Philosophy. There is now an urgent need for technically trained men in the field of range management and especially for individuals with a degree of Doctor of Philosophy to assist in solving certain of the complex problems associated with the biotic complex that occurs on a high percentage of the range areas in the United States. It is common knowledge that certain phases of general agriculture and forestry have been slow in developing the high degree of efficiency that other sciences have obtained with the employment of doctorate trained men. It would, therefore, seem that one of the principal reasons for the lag in the scientific contributions in range management has been in part because of the few doctorate work-

[1]Paper presented at a meeting of the Division of Range Management, Society of American Foresters, Washington, D. C., December 15, 1950.

ers. Thus, much emphasis must be placed on the importance of graduate work in educational institutions that are prepared to handle range management training. A teaching staff, well trained in both the technical and applied phases of range management, should handle such graduate instruction. The Department of Range and Forestry at the Agricultural and Mechanical College of Texas is taking the lead among educational institutions by setting up a graduate program that includes work for the Doctor of Philosophy degree in range management.

Problems for Research

The needs and opportunities for research in range management appears to be practically unlimited, and the advances that should be made, must in most cases, come through both the technical and applied phases: The facilities for doing research have greatly improved during the past 10 years and more quantitative results may be expected. Much research has been undertaken on the major range problems common to various regions and localities within the entire range territory. However, only certain degrees of success have been obtained and additional data are necessary to secure more reliable results which will correct conservation practices in a given range management program. Among the outstanding problems in range management that should be strengthened with additional research data in order to clarify certain practices, in both small and large range areas of the United States, are:

1.—*The determination of proper rates of stocking in the various types and subtypes of vegetation in specific localities.*—Because of the highly diversified range environments in the United States more quantitative data must be forthcoming from research before the answers can be given as to the proper rates of stocking for all the environments under which grazing is practiced. This is one of the most delicate problems that confronts the range scientist in a highly diversified range area.

2.—*The control and eradication of noxious brush species over a large portion of the Southwest and Southern great plains ranges.*—The opportunities for controlling noxious brush species have increased manyfold during the past 10 years through the introduction of "hormone" and other chemicals, and highly specialized machinery.

3.—*Reseeding of abandoned cultivated lands and abused ranges throughout the range territory.*—In the past, millions of dollars have been practically wasted in an attempt to reseed numerous range areas of highly diversified environments.

4.—*Erosion control as applied to various range sites.*—Considerable progress has been made through research in the control of erosion, but if more rapid progress is to be obtained, closer coordination with other range management practices must be brought into an overall program.

5.—*The determination of range condition classes in the various types and sub-types of vegetation that might be used as a guide for ranchers for proper rates of restocking of their ranges.*—Today, range scientists are not in agreement as to the reliability of range condition classes as a guide for proper rates of stocking in the various environments associated with the general ranges. More information is needed relative to the physical and chemical factors of the soil associated with a given range condition class to definitely determine whether grazing is both the cause and the effect. The reaction of the soil factors to certain grazing intensities may profoundly effect plant succession even under what might appear proper management. Other site factors such as exposure and underground drainage must be considered. These assumptions can be settled only through sufficient research in widely distributed localities. If, through additional research, range condition classes can be established as a reliable criterion for proper rates of stocking, millions of dollars may be saved by range people in the future, by proper management.

6.—*The determination of the chemical composition of "key" forage species in relation to specific sites and seasons for different kinds of livestock.*—This problem has been only generally investigated and specific data should be forthcoming that would aid substantially in determining the kind of livestock best suited for a given area and season. In addition, the results of research might indicate, in many areas, the deficiency of a vital element which was found to be in southern and southeastern Texas where a phosphorous deficiency introduced the "Creepes," a condition that has been fatal to livestock. This deficiency is now being corrected by the addition of phosphorous compounds to the soil or to the drinking water of the livestock.

7.—*The effect of grazing frequency and intensity on the root systems of certain "key" forage species, especially grasses, in relation to regions and specific sites.*—Only a limited amount of information is available relative to this problem although certain studies have shown that the root systems of given forage grasses have responded equally as much to grazing practices as the foliage growth. Frequent and intense grazing may be more detrimental to the normal root behavior than is generally known. Thus, additional research should bring forth such information which would point the way to proper management practices.

8.—*The control or eradication of poisonous plants on range areas.*—Poisonous plants have greatly increased, in recent years, on ranges that have been abused in the past. Especially is this true for such species as halogeton, *Halogeton glomeratus*, in the Intermountain region; bitterweed *Actinea ordorata* in the Southwest; common St. Johnswort, *Hypericum performatum* on the Pacific Coast and in the Northwest, and poisonous vetch, *Astragalus* ssp. which are rather widely distributed over much of the general range country. The opportunities to eradicate, or control, many of the poisonous species

with the use of one or more of the "hormone" chemicals in formulations with certain other chemicals as well as other means, appear most promising. It is the goal of the researcher to produce lethal results on the poisonous plant and not harm the desirable forage species. Several experiment stations are very much interested in the poisonous plant problem and it is hoped that much progress will be made.

9.—*To determine the value of deferred or rotation grazing practices, as compared with seasonal and year-long grazing, on certain range areas of the Southwestern and Southern plains regions.*—Research dealing with this problem is being conducted in New Mexico and Texas and rather promising results have been obtained.

10.—*To develop and execute a range management plan whereby many of the foothill ranges below the Forest Service boundaries, in the mountainous regions of the West may be brought back to a productive state.*—These ranges have suffered severely from spring and fall overstocking and as a result much of the desirable forage species have been replaced by less desirable species and erosion of a serious nature is often active. To improve such a condition satisfactorily calls for considerable research by several agencies interested in land use and range conservation.

11.—*To determine a balanced livestock grazing plan in the mountainous regions of the West, which might be applied to both mountain and low-land ranges, as an economically and conservationally sound program.*—Today, many ranchmen and farmers, with small holdings, are struggling to develop an economic livestock unit whereby they can graze a certain percentage of their livestock on forest ranges under Forest Service rights in the summer, but are obliged to produce or purchase considerable feed to supplement their limited acreage below the foothills or in the adjacent valleys. Considerable progress has been made on this problem, but more data should be obtained before any definite conclusions can be drawn.

12.—*The determination of a desirable combination of animals for proper economic stocking in native pastures of the southwestern and southern Great Plains.*—Very little reliable information is available as to the ratios of cattle, sheep, and goats which might be economically and conservationally grazed on certain types and sub-types of vegetation in these areas for either seasonal or year-long periods.

13.—*To determine the proper range management practices that will be the most economically and conservationally sound in the piney woods of the Southern states.*—In eastern Texas there are approximately 16 million acres of mixed timber and grasslands about which highly diversified opinions occur among the timbermen, farmers, and ranchmen regarding the most desirable range management practices that should be followed for economical livestock production. In general, both the soil and the vegetation are low in certain desirable forage elements and range burning is a prevalent practice. The opportunities of supplying the people of the general area with reliable information as to the most desirable management practices through research are many and most urgently needed in this field of range management.

Although the advances in range management will be made through research, it has become obvious that more effective ways and means of disseminating the information to range people and the general public are necessary, than through technical bulletins and papers.

The results of several surveys concerning the sources from which ranchers and farmers obtained agricultural information revealed that a high percentage of such information was obtained from newspapers, farm magazines, and journals. Only a very small percentage was obtained from research bulletins and technical papers. It was quite startling, however, to note these surveys show that a high percentage of the agricultural information carried by these sources of popular presentation were obtained from technical bulletins and papers. Thus, an unusual opportunity is presented to educational institutions and agencies interested in the dissemination of range management research results for both ranch people and the general public, to popularize much of such information. Evidence also points out the importance of good illustrations in such publications.

Opportunities are now available to inform the general public of range research results through periodicals in fields other than agriculture, which are willing to accept timely range conservation papers for publication. The radio offers an unusual opportunity to bring timely range management information to the homes of a large percentage of the ranch people who might be in need of such advice. Television may in the near future offer a desirable means of spreading the gospel of how a desirable range management program may increase the grazing capacities of the ranchmen's ranges and thereby substantially increase their incomes.

Another important source of speeding up the dissemination of range research results, not only by word of mouth, but by demonstrations, is the range management specialist. This individual is in a position to work through the county agents and the 4-H clubs. He can stimulate action by suggesting the application of research results where they are needed most. Since the appointment of a range extension specialist at the Agriculture and Mechanical College of Texas in 1947, the first such position in the United States, great strides have been made in bringing range management knowledge to the attention of a large group of ranchers by means of practices, programs, exhibits, illustrated lectures, and demonstrations. Through the extension specialist, county agents were encouraged to prepare mounted range plant specimens for display in their office, at exhibits, field days, group meetings, and for 4-H club instruction on plant identification. The range specialist also assists county agents in the supervision of many proper stocking demonstrations, deferred and rota-

tion grazing demonstrations, and reseeding demonstrations — 1,374 reseeding demonstrations were carried on in a given year.

The 4-H club leaders, under the supervision of the range specialist, promoted grass judging programs which have become quite popular. These judging contests soon included forage species other than grasses. The contests were extended beyond inter-club activities to regular group contests, county and state livestock shows, county fairs and finally to the state fair. Keen interest and competition resulted, and the families of the competing boys often became interested in the identification of forage species, which led to greater interest in range management practices. It was not uncommon to attend an agricultural meeting in Texas where the men have set up a prize for the person who correctly identifies a specific forage plant or a series of plants. These activities in which the range extension specialist plays an important role, have greatly prepared the way for the introduction of range condition class contests through competition of both 4-H club activities and the ranchmen.

The range management personnel of the U. S. Forest Service, in certain localities, have been somewhat handicapped to carry on competitive programs, as described above, with the ranchmen and their sons who live below the forest boundaries. However, an unusual effort should be made in the future to cooperate with agencies participating in range improvement programs and thus broaden their field of activities among the ranch people who graze their livestock on Forest Service lands.

In the past range management agencies have, through their personnel, aroused considerable interest in range problems in large field day meetings and demonstrations. It is now apparent however, that even more may be accomplished with smaller groups of ranchmen and others interested in range conservation. Fewer detractions common to large crowds occur in small groups. Therefore, more attention can be given to problems that are of particular interest to a given group. This approach of informing people relative to the various range practices that should be applied in a given area or environment appears to offer an unusual opportunity, in the future, for additional gains in the overall range rehabilitation program.

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Planting in the Appalachian Spruce-Fir Type

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IN 1899 Hopkins[1] reported that a million and a half acres of the spruce type along the West Virginia, Virginia, North Carolina, and Tennessee mountain crests had been devastated. Foresters have overworked that term, but obviously the condition of upper slopes in this type attest the devastating change (Fig. 1). The close succession of clear cutting, fire, and erosion caused more or less permanent loss of three elements of the forest resource. Clear cutting removed the timber, fire the young growth, and erosion some of the soil. Under protection from further burning, the natural procedure of restoration has begun. The first tree growth to reappear with the herbaceous cover is not spruce, but inferior hardwoods. It may take the spruce 500 to 1,000 years to come back unaided, and then only on a reduced area. To rebuild the soil fully could take even longer. Acceleration of these leisurely natural processes is in the public interest.

FIG. 1.—Result of destructive logging and repeated fires; site of a virgin spruce-fir forest, Mount Mitchell, N. C.

Planting trials were started in 1940 on the Pigeon River watershed on the Pisgah National Forest in North Carolina. Seeds were sown in spots with and without screens. Ten treatments of planting stock were tested in six randomized blocks. These treatments were:

1. Fertilizer placed in the planting hole
2. Fertilizer beside the planting hole
3. Hormodin A
4. Transplantone
5. Site preparation by burning
6. Site preparation by grubbing
7. Large stock, no other treatment
8. Release in first and fifth year
9. Check, with 3-foot scalp
10. Check, no scalp

The six blocks at an elevation of about 5,500 feet sampled various aspects, soils, and vegetal conditions. Nursery stock used was 2-1 transplants, 256 per treatment divided equally between red spruce and red pine. Moss covered less

[1]Hopkins, A. D. Report on investigations to determine the cause of unhealthy conditions of the spruce and pine from 1880-1893. West Virginia Agric. Exp. Sta. Bul. 56. 1899.

FIG. 2.—Density of this cover, mostly bracken fern, indicates necessity for first-year release of planted trees. The ruler is a foot high.

than 0.3 percent of the surface soil. The stand of shrubs and trees was light; its density was 0.2. The principal ground cover was largely herbaceous, with a density of 0.9 to 1.0, mainly blackberry with some hay-scented fern and goldenrod (Figs. 2 and 3). In each block one lot of trees planted in the spring of 1940 was released from ground cover by clearing 3-foot circles about July 1 of that year. Further release the next year was found unnecessary. A second release was made in the fifth year.

Third-year results were reported by Minckler.[2] He concluded that density of vegetative competition, rather than its species composition, was the main hindrance to planted trees and that release was essential nearly everywhere.[3]

Information now available from a tenth-year re-examination completed early in 1950 confirms Minckler's third-year results. The data show that of all treatments tested, release is by far the most important for the successful establishment and development of stands. Direct seeding and the four different treatments with fertilizers or plant hormones were unsuccessful; thus they were not re-examined in 1950. As Table 1 indicates, unreleased red spruce planted four different ways showed an average survival of 67 percent and height growth of 1.6 feet at the end of 10 years. By contrast, the red spruce that had been released from brushy competition showed a survival of 90 percent and height growth of 3 feet.

On unreleased lots, large planting stock grew slightly, but not significantly better than ordinary planting stock. None of the treatments for unreleased stock appeared superior to the control. While pine excelled the spruce in growth rate, it did not survive nearly as well. Only about half of the released pines were alive after 10 years, as contrasted with 90 percent of the spruce. Without release, about two-thirds of the spruce are now alive as against 18 percent of the pine. Although spruce is the more tolerant of shade, it is retarded by competition. Its growth response to early release (in percent of height) was essentially the same as that of the pine.

The growth rate of spruces re-

TABLE 1.—SURVIVAL AND HEIGHT GROWTH OF RED SPRUCE AND RED PINE IN RELATION TO SITE PREPARATION AND RELEASE FROM DENSE HERBACEOUS AND SHRUBBY VEGETATION

Species and treatment	Number planted	Thrifty 3rd yr.	Survival 3rd yr.	Survival 10th yr.	Height 3rd yr.	Height 10th yr.
	Trees		*Percent*		*Feet*	
Unreleased			RED SPRUCE			
Check[1]	362	58	69	66	0.7	1.4
Burned	178	72	77	75	.8	1.7
Large stock	178	60	65	62	1.0	2.1
Grubbed[2]	178	68	75	69	.7	1.4
Average	.....	64	71	67	.8	1.6
Released[3]	183	90	93	90	.9	3.0
Unreleased			RED PINE			
Check[1]	356	44	70	15	1.0	2.6
Burned	178	45	72	17	1.1	3.0
Large stock	180	43	67	25	1.5	3.3
Grubbed[2]	175	46	71	19	1.1	4.3
Average	.....	44	70	18	1.1	3.2
Released[3]	180	83	92	48	1.3	5.6

[1] 3-foot scalp and regular check plots combined.
[2] 3-foot scalp spots grubbed 4 inches deep.
[3] 3-foot spots cleared in June or July 1940 and again in 1944.

FIG. 3.—Here a scattered stand of fire cherry and other small trees does not add much to the difficulty of planting spruce in spots cleared in the dense herbaceous cover, but its subsequent development makes a second release imperative a few years later.

[2] Minckler, Leon S. Reforestation in the spruce type in the Southern Appalachians. Jour. Forestry 43: 349-356. 1945.

[3] A possible exception might be made where the density of the vegetation is 0.7 or less on good soil and where superior planting stock is available. Such favorable conditions, unusual then and more rare now, will seldom obviate the need for timely release.

leased the first and fifth years could have been increased if competing shrubs or trees had been again cut back at 7 years. Scattered hardwood of density 0.2 can readily develop, by sprouting and ingrowth, into a thicket of density 0.8 in 10 years. The ability of crowded or overtopped spruce seedlings to survive several years does not mean that release can be neglected or postponed indefinitely. With the benefit of release, the high survival in early years can be maintained at a high level. Then close stands of spruce can be developed in solid ranks resistant to windfall. This will go far to reduce the kind of loss shown in Figure 4. Nearly full stands are necessary for the mutual support and protection of spruce seed trees.

FIG. 4.—Windfall loss of typically shallow-rooted mature spruce, although heavy among isolated trees like this specimen, is not so common in well-stocked seed-tree groups.

Conclusion

Any attempt to reclaim the depleted spruce-fir type for economic timber production can utilize the results of tests of the past decade. Planted on similar sites, the survival of red spruce at 10 years was nearly twice as great as that of red pine, but the height of the surviving spruces was little more than half that of the pines. It is recommended that red pine be planted only on the drier, more exposed situations in the spruce-fir type. It needs deep mineral soil and should have only moderate vegetative competition. Spruce should be planted in the moister, less exposed situations with soil containing more organic matter. It will tolerate relatively shallow, rocky soils, or rather heavy vegetation, or both, but will need release if it is to grow well.

Artificial regeneration through hand sowing of seeds in prepared spots is not recommended. In this method miscellaneous causes, notably frost heaving, have led to many failures.

If a large portion of the unproductive spruce-fir type cannot be planted and released in the next few years, separate strategically located areas should be planted and given intensive care until firmly established. These should be on the upper slopes where they will develop into compact windfirm islands of spruce capable of showering seed on the land below (Fig. 5). Such areas will reduce the planting if not the release expenditures needed to restore the spruce belt to reasonable productivity.

FIG. 5.—Young stand in strategic ridge-top location. Seeds from the trees in the center of this picture can be wind-blown onto denuded lower slopes.

In most situations with moderately dense cover, two release cuttings are essential to the development of a full stand of planted trees. More than two may be needed where competing woody vegetation, firmly rooted at the start, overtops the planted seedlings quickly. The proper timing of repeated release measures depends on the rate with which aggressive competitors close in. It is imperative that the needed release be provided. Where a portion of planting appropriations cannot be reserved for this work, it would be better policy not to plant.

Stand Density as a Factor in Estimating White Oak Site Index

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Precise estimates of site index must take into account differences in height growth resulting from variations in stand density. This article supplies site index curves for four densities of stocking of even-aged stands of white oak.

THE INFLUENCE of stand density on the height growth of trees is often evident. Trees growing singly or in park-like stands do not appear to grow as tall as they might in denser stands on the same site; conversely, trees growing in very dense stands may be taller than expected. Such differences in stand density do affect height growth and thus affect estimates of site index. This problem has received consideration in site-index determination.[1] The purpose of this study is to develop an improved method for estimating site index in white oak stands of varying density.

The influence of density on the height growth of even-aged white oak (*Quercus alba* L.) was investigated by collecting data from 51 two-tenths-acre, circular plots located in southeastern Ohio. The mean age of the stands varied from 30 to 114 years. Ten to ninety-five percent of the basal area on each of the plots was white oak. Important associated species included black oak (*Q. velutina* Lam.), chestnut oak (*Q. montana* Willd.), scarlet oak (*Q. coccinea* Muenchh.), northern red oak (*Q. borealis* Michx.), and various hickories. Plots were located over a wide variety of topographic conditions, but each plot contained a single soil type of nearly uniform surface-soil depth.

All trees breast high or taller were tallied by species and 1-inch diameter classes. Mean age of the stand on the plot was determined by boring four to eight dominant white oak trees at breast height. Three years were added to the breast-high age to approximate total age. The age of dominants of other species was determined to exclude stands uneven-aged by species. Total height of the dominant white oaks was obtained with the Abney level and surveyor's chain.

Any method of estimating and expressing stand density should be simple, and, if possible, be independent of stand composition, site index, and age. These requirements are most completely satisfied by the tree-area ratio proposed by Chisman and Schumacher.[2] The tree-area ratio is, according to the authors, a "... method of allocating tree area according to d.b.h. of individual trees by means of a quadratic equation fitted by the method of least squares to sample *plot* data. . . . Plot data in number of trees, sum of diameters, and sum of squared diameters, which supply the observations, are expressed on the unit area bases—or, better, the areas of plots in the field are constant and taken as unity. The calculated equation is then an expression of density of stocking as a proportion of the average density of stocking represented by the data. Consequently, if the data represent fully stocked plots the equation supplies a stocking norm for the timber type, or condition, upon which it is founded." Chisman and Schumacher found no perceptible effect of age or site index upon the tree-area ratio in their data.

The tree area ratio, obtained from the data of the present study, is:

$$\text{Stocking norm (percent)} = 0.0038 + 0.0949d + 0.0137d^2 \qquad \text{Eq. 1}$$

where d is the sum of the tree diameters on any sample plot and d^2 is the sum of the squared diameters.

Conventional site index (mean height of dominant and codominant trees at age 50 years) was determined according to the height-growth pattern of the 51 plots and can be summarized as,

$$\text{Log height} = 2.0049 - \frac{11.6409}{\text{age}} \qquad \text{Eq. 2}$$

and can be rearranged to meet the conditions imposed by the site-index concept,

$$\text{Log site index} = \text{log height} + \frac{11.641}{\text{age}} - 0.233 \qquad \text{Eq. 3}$$

It is noted that Equation 3 is in exact agreement with the site-index curves developed for upland oaks.[3]

The influence of stand density on conventional site index becomes evident when the logarithmic estimates of site index from equation 3 for the 51 observations of this study are plotted over the stocking norm (Equation 1). The trend of this distribution is linear. The significance of this distribution is tested by expanding Equation 2 to include the stocking norm as a linear addition. Stand density does significantly influence height growth (Table 1) and, therefore, estimates of site index.[4] Because Equation 4 accounts for the effect of stand density, it is a more precise expression of the height-age relationship in even-aged stands of white oak than is Equation 2.

$$\text{Log height} = 1.878 - \frac{11.638}{\text{age}} + 0.129\,(\text{Stocking norm}) \qquad \text{Eq. 4}$$

If site quality is to be expressed as site index and is defined as height at age 50 years, this condition may be imposed upon Equation 4. One then obtains Equation 5 which describes the site index curves of Figure 1, which are cor-

[1] MacKinney, A. L., F. X. Schumacher, and L. E. Chaiken. Construction of yield tables for nonnormal loblolly pine stands. Jour. Agr. Research 54:531-545. 1937.

[2] Chisman, H. H. and F. X. Schumacher. On the tree-area ratio and certain of its applications. Jour. Forestry 38: 311-317. 1940.

[3] Schnur, G. L. Yield, stand, and volume tables for even-aged upland oak forests. U. S. Dept. Agr. Tech Bul. 560. 1937.

[4] The stocking norm was not found to be effected by site index nor stand age. Which is to say, that high or low densities occur with equal probability on any site regardless of its quality for tree growth, and without regard for the present age of the stand.

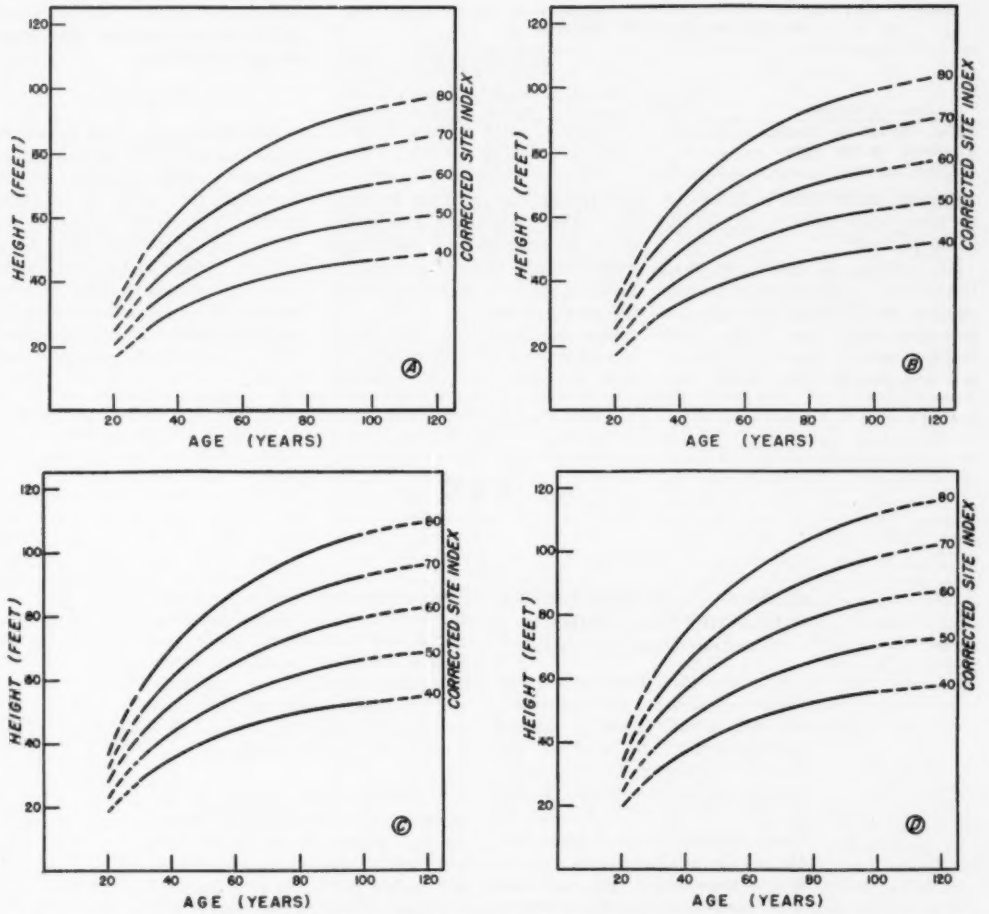

FIG. 1.—Site-index curves for even-aged white oak stands having variable stocking norms. *A*.—Stocking norm equals 60 percent, *B*.—80 percent, *C*.—100 percent, and *D*.—120 percent.

rected for variation in stand density.

$$\text{Log site index} = \log \text{height} + \frac{11.638}{\text{age}} - 0.129\ (\text{stocking norm}) - 0.103 \qquad \text{Eq. 5}$$

An example of the use of Equation 5 may be worthwhile. Assume that a two-tenths-acre area supports a total of 119 trees breast high or taller, and that these trees have been tallied by 1-inch diameter classes (the mean diameter of the 0-inch class being 0.25 inches and the successive diameter-class means being 1.0, 2.0, 3.0 inches, etc.). The sum of the diameters on any sample plot is obtained by addition. The squared diameters are obtained by squaring the mean diameter, multiplying by the tally for that diameter, and summing. In this instance, the sum of the diameters is 362, the sum of the squared diameters is 3129. Substituting in Equation 1:

$$\text{Stocking norm} = 0.0038\ (119) + 0.0949\ (362) + 0.0137\ (3129) = 78 \text{ percent}$$

Furthermore, assuming the mean age of the stand to be 61 years and the mean height of the dominant white oaks to be 63 feet, we may substitute these values in equation 5 to obtain the site index:

$$\text{Log site index} = \log 63 + \frac{11.638}{61} - 0.129\ (.78) - 0.103$$

$$\text{Log site index} = 1.7993 + .1908 - 0.1006 - 0.103 = 1.7865$$

$$\text{Site index} = \text{antilog } 1.7865 = 61$$

Had density been ignored in the foregoing example, the estimate of site index would have been 57 according to Equation 3, and 57 according to the curves for upland oaks. The density correction in the example cited accounts for a 4-foot change in site index. A 5-foot difference in site index makes a difference of as much as 10 percent in total cubic-volume yield. The estimates of site index for a stand 50 years old and 50 feet tall differ by approximately a full site-index class of 10 feet if the extremes in density are compared, and this

TABLE 1.—ANALYSIS OF VARIANCE FOR THE INFLUENCE OF THE STOCKING NORM ON THE GROWTH CURVE (EQUATION 2)

Source of variation	Degrees of freedom	Sum of squares	Mean square	Variance ratio	Level of significance (Percent)
Added effect of the stocking norm	1	0.0147	0.0147	5.43	5
Regression on age alone	1	0.2430	0.2430	.....	..
Residuals	48	0.1297	0.0027	.....	..

variation could make a difference in total cubic-volume yield of 10 to 20 percent.

In passing, it should be mentioned that a detailed analysis was made of the factors influencing the tree-area ratio for white oak. Neither stand age, composition, nor conventional site index had any perceptible effect on the tree-area ratio. When the joint effect of age or composition is considered with conventional site index, statistically significant modifications of the tree-area ratio do obtain. The interpretation of these joint effects is rather obscure and their practical influence on the tree-area ratio is very small. Further study of these modifications was abandoned as fruitless.

Summary

The height growth of even-aged white oak is significantly modified by stand density. Site-index curves, corrected for variation in stand density, have been developed for white oak in southeastern Ohio, and an example of the use of these curves is presented. The modified curves differ from conventional site-index curves at both the statistical and practical levels of significance.

A Study of Water Infiltration into Spoil Banks in Central Pennsylvania[1]

A study of infiltration in relation to spoil types has been made on strip-mined areas in central Pennsylvania. The common coal beds of the region, in their stratigraphic order from bottom to top, were the Brookville or A seam, the lower Kittanning or B seam, and the middle Kittanning or C seam. Over-burden above each coal seam was found to contain the following rock formations: (1) yellow-brown, thick-bedded, silty shales and/or sandstones; (2) dark, thin-bedded, carbonaceous shales. The spoil banks related to the B and C coals were predominantly dark shale spoil, while spoil banks related to the A seam were predominantly sandstone and yellow shales.

The method used to test infiltration was a flooding system set up primarily to get comparative results. A cylinder of 18-gage metal, 11.1 inches in diameter, was sunk 4 inches into the spoil with the aid of a rock chisel. Clay was used to seal any spaces between the spoil and the inner wall of the cylinder. The cylinder was buffered around the outside and a slight head of water was maintained inside before a measured volume of water was poured into it. The operation was continued until a constant rate was maintained. Tests were also made in the nearby woods for comparison.

The dark shales, because of the presence of large air spaces caused by high gravel content, showed an infiltration capacity of from 65 to 397 inches per hour with few exceptions. Tests in the Dekalb silt loam in the nearby woods showed infiltration rates of 17 to 60 inches per hour; while rates for the yellow, thick-bedded shales and for a mixture of both spoil types ranged from no measurable infiltration to 17 inches per hour. The lower rates of the yellow shales and sandstones can be attributed to lesser air space caused by the dispersable nature of the soil as well as to higher soil contents. Soil content averaged 20 percent for dark shales and 39 percent for yellow shales and sandstone. The presence of frost or compaction reduced infiltration in any spoil type.

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[1]Abstract of a thesis submitted for the degree of Master of Forestry at The Pennsylvania State College, 1951.

Notes

A Further Note On the Control of the White Pine Weevil[1]

Preliminary experiments to determine the effectiveness of sprays for the control of the white pine weevil under Wisconsin conditions were conducted in 1947. The tests were made at the Hartman Creek Fish Hatchery, near Waupaca in central Wisconsin. The 80-acre hatchery site was selected, after inspection of numerous other areas, because the weevil was causing the greatest damage there, the trees were relatively small (6 to 12 feet tall), and large numbers were available. Other white pine plantations were at least one-half mile distant from it and there were only a few large white pines nearby, thus reducing the likelihood of rapid reinfestation from outside sources. The plantation was established from 1939 to 1941 with white pine predominating, with Norway or Austrian pine intermixed in groups, hardwoods interspaced in some places, and Norway spruce planted in low spots. Rows had been "staggered" slightly to give a natural appearance. Although all infested leaders had been clipped and burned 3 years before, damage had continued. Dead leaders were clipped from all trees which had been weeviled during 1945 or 1946 in the test area before sprays were applied in order to assist in determining the numbers weeviled after the treatments. Check strips showed that 31 percent had been weeviled during those 2 years.

Because of cold weather and concomitant plugging of nozzles, an attempt to apply spray, using the method, equipment, and lead arsenate formula recommended by Potts, Cline, and McIntyre,[2] was unsuccessful. After several tests of formulations for flowability at temperatures below freezing and for adhesive quality the following formula was adopted: water 9½ pints, lead arsenate 1 pound, boiled linseed oil 4 fluid ounces, Du Pont Spreader-Stickerm 95 drops (3 ml.). This combination proved effective even when the temperature dropped to below 32 degrees F and on April 11 and 13, 1947 the leaders (or top whorl of branches where the leaders had been clipped) in a block of 4,000 white pine trees were sprayed.[3]

On April 14, DDT was applied to the leaders or top whorl of branches in a block of 2,300 trees, using a nozzle and formula recommended by Dr. Potts in correspondence.[4] The temperature rose to only 45 degrees F. and some crystallization of DDT occurred in the knapsack sprayers. Owing to staggered rows and lack of visible deposit, it was necessary to use cloth strips as guides and move them from row to row as the treatment progressed.

The lead arsenate remained visible on some trees to as late as July 24. In October a search of the entire lead arsenate plot showed no weeviled trees and only four were found in the DDT plot. In contrast, when 1,000 white pines were counted (by making ten counts of 200 trees each) in areas adjacent to and between the sprayed plots, 49 were found to have been weeviled during the season. The cost per tree for materials and application was 0.528 cents for lead arsenate and 0.505 cents for DDT.

Because of the very favorable results obtained in the preliminary tests an experiment was started at the same location in 1948 to determine how long it would take the population to build up after all the white pine in the plantation was treated. At the same time it seemed desirable to test certain other insecticides.

Spraying with lead arsenate was started on April 14, 1948 using the formula adopted in 1947 and the same type of equipment. The work was hampered by unfavorable weather and shortage of labor and, as the work progressed, it became evident that it would not be possible to spray the entire stand.

Since it had been noticed that the weevil was very abundant in some places and difficult to find in others, a survey was made of the untreated areas remaining and they were sprayed in the order of descending abundance of weevils. Approximately 41,275 white pines were sprayed, with a block of about 8,000 in which no weevils or evidence of their feeding could be found, remaining unsprayed.

In one area, selected for even distribution of evidence of feeding and abundance of weevils, adjoining plots were sprayed with other insecticides, application being made to the leaders in the same manner as with lead arsenate. Cloth strips were used as guides for the spraying in each plot. The formulations used, date of application, number of white pine trees in each plot, cost per tree, and numbers of weeviled trees found in 1948, 1949, and 1950 are summarized in Table 1. (In each case six gallons of spray was applied. The number of trees sprayed varied with the number of leaders previously weeviled as it was necessary to spray the top whorl of branches where the leader had been killed.) Examinations made subsequently showed no phytotoxic effects from any of the insecticides used.

Late in the fall of 1948 the entire plantation was examined for weevil damage. Since all the white pine, except the block where no weevils were found, had been sprayed there remained no true check areas. However, unsprayed Norway spruce which adjoined white pine had 21 percent of the leaders with current injury while the treated white pine next to it showed only one injured leader (0.84 percent counting only the 122 white pines immediately adjacent to the spruce). Four hours of walking through white pines sprayed with lead arsenate produced only eleven weeviled leaders, the percentage of infestation being extremely small. In the unsprayed block, where no weevils were observed in the spring and where there was no evidence of their feeding, only 36 weeviled leaders were found during a three-hour search. Parasites had evidently hunted out the infested trees throughly as many of the weeviled leaders contained only parasites.

During 1949 and 1950 damage in the plantation was negligible. The weevil population appears to be so low that spraying will not be justifiable in 1951, there being less than

[1]Results of a cooperative project between the College of Agriculture of the University of Wisconsin and the Wisconsin Conservation Department. Approved for publication by the director of the Wisconsin Agricultural Experiment Station.

[2]Potts, S. F., A. C. Cline and H. L. McIntyre. The white pine weevil and its control by the application of concentrated sprays. Jour. Forestry 40: 405-410. 1942.

[3]The writer wishes to express his appreciation to the Wisconsin Conservation Department personnel who did most of the actual spraying.

[4]Monarch F80 series 5.00 nozzle. (This nozzle proved to be the best of those tested.) DDT tech. 1 pound, benzene 1 quart, Triton X-100 2 ounces, water 5½ pints.

TABLE 1.—RESULTS OF APPLICATIONS OF INSECTICIDES FOR CONTROL OF WHITE PINE WEEVIL IN 1948

Insecticide	Amount of insecticide used	Date of treatment	No. trees treated in plot	No. weeviled trees in plot 1948	1949	1950	Cost/tree[1]
DDT 50% w.p.	2 lbs.	April 15	1571	0	8	3	0.378 cent[2]
Chlordane 50% emulsifiable	1 qt.	April 19	1101	2	10	6	0.574 cent[2]
Toxaphene 25% w.p.	2 lbs.	April 19-20	1149	4	3	4	0.399 cent[2]
BHC 5% gamma w.p.	2 lbs.	April 20-21	1174	1	14	2	0.398 cent[2]
Lead arsenate			1250[3]	2	5	1	0.413 cent

[1]Cost of application alone was 0.297 cent per tree for the entire project.

[2]Includes an estimated 1/20 cent per tree for the laying of cloth strips to serve as markers and moving them as spraying proceeds. Might be eliminated by using dyes in the spray.

[3]Counted in an area of the same length and shape as the others and next to the BHC treatment.

0.5 percent of the white pine leaders infested in all areas of the hatchery at the present time.

The results of spraying with lead arsenate for the control of this insect are apparently very similar to those described by Crosby[5] in Connecticut.

While there seems to be little difference in the effectiveness of the different insecticides at the dosages used, lead arsenate appears to be preferable for control of the white pine weevil, when treatment is made from the ground, for the following reasons: (1) it leaves a visible deposit, serving as a marker of treated trees; (2) it remains for the necessary length of time on the leaders, residue having been observed as long as five months after treatment; (3) it does not have a contact action on parasites; and (4) it seems safer to use, since it is difficult to spray the leaders of taller trees without getting the insecticide on the face and other parts of the body.

A careful examination of the area to be protected should be made before treatment for adult beetles and evidence of their feeding. The observations made while treatment was being applied at Hartman Creek, together with the results obtained, indicate that the beetles do not move to any appreciable extent in the spring from spots where they are feeding. Large blocks showing little or no evidence of the weevils apparently can be safely left unsprayed.

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[5]Crosby, D. Concentrated lead arsenate spray for control of the white pine weevil. Jour. Forestry 48:334-336. August 1950.

An Investigation of the Tolerance of White Ash Reproduction[1]

Desirable tree species such as white ash (*Fraxinus americana* L.) are decreasing in species composition in beech-sugar maple stands of the Central Hardwoods Region. This investigation was conducted in order to determine the tolerance of white ash reproduction and hence suggest possible forest management practices which would favor white ash regeneration.

The basis of this study was 26 plots of natural white ash reproduction in the beech-sugar maple woodlots of Ingham County, Michigan. The plots varied from 250 square feet to 1,700 square feet in size, with an average of 800 square feet. Each plot contained from 10 to 200 white ash seedlings. Selection of a plot was contingent upon: (1) the presence of a definite, definable canopy over or adjacent to the plot, (2) the presence of average ground cover competition on the plot, and (3) similarity of soil type (Hillsdale sandy loam, heavy phase, or Conover loam). The field observations found to be significant are as follows:

1. Presence or absence of a distinct canopy opening directly over the plot.

2.—Canopy height, which was divided into three classes: low—saplings less than 15 feet, medium—young mature timber 15-80 feet, and high—mature timber over 80 feet.

3.—Canopy density, which was divided into three classes based on Wesson light meter readings: thick-dense, low canopy where approximately one percent of full sunlight (10,000 foot candles) is present; medium—medium to high canopy with a few scattered openings where approximately 1 to 3 percent of full sunlight is present; Thin—sparse, but continuous canopy where more than 3 percent of full sunlight is present.

4.—Measurement, in tenths of a foot, of annual height growth of each ash stem that was independent of any shading effect of ground competition. The terminal bud scars readily define the annual growth for each year. All ash reproduction was divided into age classes of 1 to 9 years, 10 to 15, and 16 plus.

Plotting of data resulted in the following conclusions. White ash reproduction had progressively lower vigor and smaller annual height growth with age under heavy canopies that had either low height thick density, low height with medium density, or medium height with medium density. The average light intensity under these canopy conditions was less than 3 percent of full sunlight. This decreasing vigor and height growth was believed to be caused by lack of sunlight, and possible root competition, as other factors influencing the sites studied were quite uniform. Steady reduction in vigor and height growth will eventually result in the mortality of the seedlings. This may be averted if release cuttings are made before the reproduction is 10 years old. White ash reproduction maintained its vigor at least 15 years when growing under forest canopy openings or under light canopies that had either high height with medium density or high height with thin density. The average light intensity under these

[1]Abstract of thesis prepared in partial fulfillment of the requirements for the degree of Master of Science, Michigan State College, June 1950.

canopy conditions was greater than 3 percent of full sunlight. Reproduction under these conditions will maintain itself or thrive for at least 15 years and will probably maintain good vigor. Hence, release cuttings are [illegible] seriously needed here [illegible] denser canopy condi[illegible] ash reproduction w[illegible] be more tolerant than [illegible]ally believed. Specimens studied had existed for as long as 23 years where the vigor of the tree was steadily declining because of lack of sunlight.

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Reproduction of Pine on Old Railroad Grades in California

In a recent article, Fowells and Schubert[1] have shown clearly, with a wealth of experimental material, that in the pine-fir stands of the central Sierra Nevada the reproduction of the pines is uncertain and poor following the ordinary type of cutting.

These authors note that ponderosa pine appeared more frequently upon bare areas than did other species and that litter was less favorable for the pines than for cedar and fir. The bare areas were so limited and the catch upon them was so small, however, that the superiority was not at all marked.

The frequency of pine reproduction upon bare mineral soil free of competition is commonly observed wherever pines exist. It is nothing new and indeed is very common and striking in the same locality where Fowells and Schubert found such discouraging results upon cutover areas. Since their study did not include any of these strikingly different areas, this note is presented to supplement their findings.

Upon abandoned logging railroad grades from which rails and ties had been removed some three years previously, reproduction of conifers was observed to be notably good in many places. The writer established a series of quadrats upon one of these abandoned roadbeds which ran nearly on the contour across a heavily cutover south exposure in the pine-fir type (running rather heavier to pine than in the plots where the observations reported by Fowells and Schubert were made).

The odd size of 11 by 11 feet (approximately 1/360 acre) was selected as it fitted the width of the railroad grade. On each quadrat the dominant vegetation was recorded as well as the number of coniferous seedlings, which at that time were generally from 1 to 3 years old. The occurrence of reproduction varied distinctly with the depth of the cuts. Where the roadbed was built upon a very gentle slope there was no more than a very shallow cut on the uphill side. As the slopes became steeper there was a deeper cut on the uphill side and a fill on the lower, and in passing through ridges there were cuts on both sides.

The results from 125 quadrats on approximately a quarter mile of abandoned grades (Table 1) showed clearly enough that the pine was definitely encouraged by the conditions in the "cuts" and "half cuts," particularly when it is noted that one of the deeper cuts struck bedrock and another was so poorly drained that virtually nothing of a permanent nature was established. White fir was only sporadically established, probably because of the hot, open slope. Incense cedar was rarely predominant but showed its capacity to work into the slightly disturbed soils of the "no cut" category, just as it developed so freely upon the plots reported by Fowells and Schubert.

The absence of bear-clover, a low-growing shrub that spreads by shallow runners, from all but the "no cut" area is also significant.

The differences appear to be primarily correlated with removal of root competition. In the deeper "cuts" all the soil was removed to a depth of 1 to 5 feet and a subsoil bed free of sprouting roots was left. In the "half cuts" a considerable amount of earth was cut out on the upper side of the roadbed but on the lower side there was little disturbance of vegetation, although much of it was buried to a greater or lesser degree. As a result, root competition was only partly removed. In the "no cut" cases the disturbance of the shrubby vegetation in particular was inconsequential and dominance of the brush together with bare areas perhaps kept bare by root competition, was striking.

While the figures in Table 1 suffice to show relative dominance of the various classes of cover, they show nothing as to the amounts of reproduction involved. Table 2 shows that in general the reproduction is rather thin, although in "cuts" the ponderosa pine is not too seriously deficient. The pres-

TABLE 1.—PREDOMINANT VEGETATION ON QUADRATS IN THREE TYPES OF RAILROAD GRADES, STANISLAUS NATIONAL FOREST, CALIFORNIA (PERCENT OF EACH TYPE OF GRADE)

Predominant cover	Type of railroad grade[1]		
	Cuts	Half cuts	No cut
Bare (mineral soil)	18	21	32
Ceanothus (*C. cordulatus* and *intergerrimus*)	10	28	18
Herbs and grasses	8	2	7
Manzanita (*Arctostaphyllos patula*)	4	17	11
Bear-clover (*Chamaebatia foliolosa*)	0	0	14
Ponderosa pine (*Pinus ponderosa*)	54	30	4
Incense cedar (*Libocedrus decurrens*)	2	0	14
White fir (*Abies concolor*)	4	2	0

[1] "Cuts"—depth of at least 1 foot on both sides of the track (50 plots); "half-cuts"—1 foot or deeper on uphill side, less than 1 foot on lower side, usually fill (47 plots); "no cut"—less than 1 foot deep on either side of track (28 plots).

TABLE 2.—NUMBER OF SEEDLINGS PER ACRE ON THREE TYPES OF RAILROAD GRADES

Species	Type of grade		
	Cuts	Half cuts	No cuts
Ponderosa pine	439	245	26
Incense cedar	29	38	128
White fir	57	61	0
Sugar pine	0	15	0

[1] Fowells, H. A. and G. H. Schubert. Natural reproduction in certain cutover pine-fir stands of California. Jour. Forestry 49:192-196. March 1951.

TABLE 3.—COMPARISON OF DOMINANT VEGETATION ON AN ABANDONED RAILROAD GRADE AND ON CUTOVER LAND IMMEDIATELY ADJACENT (51 QUADRATS, 11 BY 11 FT.)

Predominant cover	Number of plots On abandoned grade	Number of plots On cutover
Manzanita (*Arctostaphyllos patula*)	1	0
Bear-clover (*Chamaebatia foliolosa*)	0	10
Weeds, sedges, grass	12	0
Stumps and logging debris	0	17
Bracken fern (*Pteris aquilina*)	0	21
Ponderosa pine	21	2
Incense cedar	17	1

ence of a few sugar pine seedlings is also encouraging, but all were found on quadrats dominated by ponderosa pine. The pine stocking is far in excess of the 70 pine seedlings per acre found in cutover areas by Fowells and Schubert.

At another locality where the original stand had been composed almost wholly of ponderosa pine and incense cedar, two more series of samples were taken. One was on the railroad grade itself; the other was on undistributed cutover land just above the edge of the cut. The dominant cover is shown in Table 3. The scanty reproduction off the railroad grade occurred in two places—one a heap of stones, the other in a spot involving two quadrats from which a heavy log had been dragged.

The implications of the thorough study of Fowells and Schubert and of these few plots are similar. Reproduction of the pines is poor and uncertain upon the usual cutover areas even though seed trees are plentiful; on the other hand, it can be secured to a fair degree on mineral seedbeds from which competition is removed or is reduced to a low level. The question then becomes, "How can abandoned railroad grades or reasonable facsimiles thereof be developed in the forest with reasonable cost and with reasonable assurance that soil erosion and deterioration will not take place?"

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Effect of Thinning Upon Yields of Second-Growth Longleaf Pine on Site 80 in La Salle Parish, La.

The site of this experiment is the West Elk Pasture, a fenced area lying northeast of Urania, LaSalle Parish, La., on the east side of the old road to Olla and adjoining the Missouri Pacific Railroad whose fenced right-of-way goes through this area.

The timber was originally pure longleaf pine on that portion where the plots are located. It was logged in 1904, and was burned annually, and pastured until the winter of 1914. The logging left an average of eight undersized 100-year-old longleaf trees per acre; their crowns were mostly scant. During the decade 1904-14 these trees developed into good seed bearers.

The area was heavily seeded in 1913, and a year later was fenced against hogs. Fires were kept out. Brown spot disease had been nearly eliminated by previous annual fires and did not reinfect the area until the seventh year after seeding. A fully stocked stand of healthy seedling survived this belated infection.

No thinning was attempted until 1933 when the stand was 20 years old. Plots of ¼ acre, with a 26-foot isolation strip, or a total of ½ acre per plot, were then established in pairs: one thinned and one check plot as follows:

Date	Age	Thinned	Check
	Years		
1934	20	1	1
1935	21	1	1
1937	23	1	1
1939	25	2	1
1940	26	1	0
Total		6	4

The method of thinning adopted was similar to that applied 3 years previously to loblolly pine stands that had originated in the same year on another portion of the area. It consisted of endeavoring to remove from the upper crown cover the codominant trees that were crowding the crowns of the dominants, and to leave spaces equal in width to that of the dominant crowns. Trees down to 4 inches were cut. This diameter was assumed to be the minimum merchantable size for pulpwood. Trees 3 inches and under were ignored. These trees have progressively died out. They never captured a place in the upper crown cover, except in two instances where too big a hole had been made.

Since the method of thinning all plots was uniform, the only differences that arose were due first to variation in the application of the plan, which did occur in the instances where too heavy a thinning was made. It was concluded that the stand should not be reduced below 80 square feet of basal area nor permitted to increase bevond 120 square feet. The second factor affecting the results was the age of the stand when first thinned.

Loblolly pine on this area had been thinned first at 18 years of age, with heights averaging 40 feet. The longleaf pine stands had started height growth at 5 years of age, and the first thinning was made at 20 years, or the equivalent of 15 years from first height growth. Results are now available for these plots at the age of 35 years.

The site class, obtained from height curves representing from 25 to 100 percent of measured heights, shows 65 feet for the upper crown classes at this age, indicating 80 feet at 50 years, with very little variation between plots. Data were worked up for the stand 4 inches and over at breast high, and to 3-inch tops, covering basal area, total and merchantable peeled cubic volume, rough and peeled standard cords (128 cubic feet) and board feet, International ¼-inch log rule. The Doyle rule was not even computed and will not be. We are not interested in perpetuating a rule that is totally inaccurate for small second growth timber. All yields

shown in the tabulation below are at 35 years of age. The thinnings made at 20 and 21 years respectively were repeated 5 years later in each case. For this early (or premature) thinning the comparison with the two check plots is shown in cords of rough wood. The subsequent plots shown, at 23 and 25 years, have had only *one* thinning.

STANDARD CORDS WITH BARK AVERAGE PER PLOT AT 35 YEARS OF AGE

Age at thinning	Yield of thinned plots			Check plots		Ratio of thinned to check plots
	Plots	Thinnings	Final crop	Total	Plots	Total
Years						*Percent*
20½	2	11.10	31.46	42.56	2	53.34	79.79
23	1	9.43	37.01	46.44	1	50.97	91.11
25	2	10.24	32.39	42.63	1	41.44	102.87

The initial stocking on these paired plots agreed very closely. The series runs from south northward, and the fact that the check plots show a descending scale of yields indicates the need for a close comparative examination of soil quality, but no differences exist in height growth. The preliminary conclusion drawn from these plots may then be that at 15 years from first height growth a 50 percent crown thinning will result in a net loss of 20 percent of the possible yield of rough pulpwood, including thinnings. (The data for peeled wood showed a similar loss.) Three years afterward, or at 18 years from first height growth, this net loss is reduced to 10 percent for total yield including thinnings. But at 20 years the yield of rough wood in cords, including thinnings, is about the same from the thinned and the check plots. The age is then 25 years. One check plot containing 52 cords of pulpwood at 35 years from seed has now been thinned, and a second will be so treated later, leaving one untouched.

Another experiment was the cutting, on one plot, of all trees 5½ inches d.b.h. and over, when the stand was 26 years old. This left a poorly distributed stand of smaller trees, which at this age still retained long crowns. This reversed the method used elsewhere, and thinned "from above" for an early crop of pulpwood from dominant trees. In spite of poor distribution, the yield, included 22 cords cut, now at 35 years equals that of untouched check plots. Had the reserve stand been distributed evenly by marking, this yield would have been exceeded. The comparison is:

YIELD IN ROUGH STANDARD CORDS

Cut to 5½ inches	Final crop	Total	Check	Ratio cut to check plot
Cut				*Percent*
19.44	22.36	41.80	41.44	100.87

Comparative yields in board feet measured by the International ¼-inch log rule for all trees 6 inches and over at breast height give the following results:

Age when thinned	Thinned		Check		Ratio, thinned to check
	Plots		Plots		
Years		*Bd. ft.*			*Percent*
20½	2	10802	2	12015	89.90
23	1	11653	1	14167	82.25
25	2	10724	1	9551[2]	112.28
26[1]	1	10644	1	9551[2]	111.44

[1]Cut to 5½ inches.
[2]Same check plot.

These results are too irregular to be conclusive but do indicate the net losses incurred in premature (15½ years from height growth) thinnings and the effect of thinnings in increasing the gain in board feet by about 10 percent (in all cases) over that of rough or peeled cords.

It is believed that no thinning of sapling longleaf pines is either necessary or beneficial, since the species shows marked ability to differentiate into dominant and suppressed trees. This condition continues, on Site 80, until the stand is about 25 years old from seed. It is assumed that height growth starts in the sixth year. If delayed, thinnings are proportionately postponed. Between this age and 30 years, it must be given a drastic thinning to remove one-half of the crown canopy, release ground space for root spread, and prevent the crowns from shortening to less than a ratio of one-third of total height. Unless this thinning is given in time, the stand rapidly stagnates, with excessively short crowns and slow diameter growth. It is then to all intents and purposes spoiled, and will not recover a satisfactory rate of diameter growth unless small live branches still are distributed downwards to give the crown the needed length. These relationships can be discovered in any stand 40 years old or older. There is no reason whatever why second-growth longleaf pine cannot be handled so as to continue a growth rate of 2 inches or more in 10 years. But if actual net loss of yield is to be avoided, thinnings should be postponed until from 25 to 30 years of age from seed, when the basal area is 120 square feet or more per acre.

The yields of longleaf pine in fully stocked, managed stands, have exceeded those of loblolly pine on the same site at Urania, although starting 5 years later in height growth. These results can be duplicated anywhere in the longleaf pine belt where proper technique is employed and an adequate seed source is employed. For poorer, 70- and 60-foot sites, the yields will be proportionately less. These sites were not present at Urania. The same principles of management apply to all sites capable of full stocking with this species.

H. H. CHAPMAN.

FAO Reports Progress in First Six Months of Technical Assistance Program

Since funds became available in September 1950 for the expanded program of technical assistance for economic development, carried on through the United Nations and specialized agencies, the Food and Agriculture Organization has completed seven projects and initiated field work on 54 others, according to a summary report of FAO technical assistance activities, prepared by Director-General N. E. Dodd for the Council of FAO at its June meeting in Rome.

As of April 1, 27 governments were receiving assistance in projects of one or more kinds leading to greater economic development in the fields of agriculture, economics and statistics, fisheries, forestry, and nutrition.

The project agreements which FAO had concluded by April 1 call for the provision of 174 experts, equipment valued at $119,960, and 104 fellowships. The projects are scheduled for periods ranging from 3 to 36 months. These approved projects, including essential administrative and supervisory costs, involve an estimated total expenditure of the equivalent of $3,873,000. This includes completion of the first stages only, in the case of the longer-term projects.

In addition, 42 agreements with governments are under negotiation. These call for 147 more experts, $126,500 in equipment and supplies, and 258 additional fellowships at an estimated total project cost in 1951 and 1952 of $2,248,000.

To find experts for a wide range of scientific work in many different countries, FAO has been helped by the excellent cooperation of governments who have made available their own experts and technicians. Research and educational institutes have likewise been generous, and as a result 110 experts have already been recruited from 25 countries, of whom 72 are already at work, or have completed their assignments.

Of the fellowships which are called for in many FAO agreements to enable nationals of the assisted countries to obtain advanced technical instruction abroad, six are already at work and it is expected that by autumn 60 will be at work in various centers, qualifying themselves to carry on the work begun under the technical assistance program. In all, 362 fellowships are provided for in agreements concluded or being negotiated.

A summary follows of representative examples of the economic development work in forestry being undertaken by various governments with FAO's technical assistance.

The utilization of marginal land and the control of unregulated foothill grazing is being dealt with under a program providing an authority on range management and soil conservation and their relationship to problems of forest lands and land used for cultivated and irrigated crops under conditions typical of a Mediterranean climate. It is expected that this preliminary work may lead to the use of Cyprus as a demonstration center for many types of grazing-land adjustments applicable to Near Eastern conditions. A range management agronomist will work in Iran in close collaboration with a forest range specialist to advise on the improvement of seasonal grazing-lands and thus reduce the pressure on forest ranges. Other forestry experts will study problems of forest protection and help in the establishment of experimental areas where modern forest range management principles may be demonstrated to local populations.

Development of unused or inadequately exploited forest resources is being aided in Brazil, where 6 technical forest advisers are studying the industrial possibilities of tropical hardwoods in the immense undeveloped forests of the Amazon valley. In the extensive coniferous area of the Parana pine, exports can be expanded to meet the sawn softwood deficit in other areas. Similarly, the greater use of tropical woods for pulp would ameliorate the world shortage of this essential commodity.

In Burma, Ceylon, and India, where efficient forest services have been long established, the processing and utilization of forest products can be effectively improved. Agreements with these countries provide technicians to instruct local personnel in the best method of conducting logging and extraction operations and sawmilling techniques. Technical assistance to Thailand covers, in addition, advice on forest management, plantation practices, and forest surveys.

Reforestation is being undertaken by Lebanon, where consideration is being given to several agricultural and forestry projects, including a plan to plant some 625,000 hectares (1,544,375 acres) of forests in 15 years.

At the request of the Austrian government, three forestry experts will advise on a broad program of forest rehabilitation, including the reforestation of some 300,000 hectares (741,300 acres) of cutover land, and on large-scale capital investments for the modernization of the Austrian forest industries, particularly of wall-board, pulp and paper plants.

Preservation of existing forests is covered by an agreement with Guatemala, where originally extensive resources have been seriously impaired by indiscriminate felling and burning to clear land for agriculture, and by destructive exploitation for charcoal-burning. Further, the pine forests of Guatemala are now seriously threatened by insect infestation, on the control of which an FAO entomologist is now working.

Relationship Between Forest Utilization and Forest Management[1]

When this subject is considered, the most obvious conclusion reached is that forest management (or silviculture) is absolutely dependent for its general practice upon utilization of the products grown in the forest. Cutting is the major tool which the forest manager must use to control the growth and development of his forest along desired lines and to obtain his annual or periodic harvest of forest products.

If he is to stay in business very long he must utilize at a profit the material which he grows and cuts in his forest. Only in rare instances, if ever, does the forest manager have a financial Santa Claus back of him capable and willing to continue forest management indefinitely without profitable utilization.

[1]Paper presented at a meeting of the Division of Forest Products, Society of American Foresters, Washington, D. C., December 15, 1950.

Fortunately this situation is now more thoroughly understood than it was in the early days of forestry in America when an occasional starry-eyed enthusiast conceived of silviculture as pure theory to be applied independently of considerations of profitable utilization. The primary dependence of forest management upon profitable markets for forest products is well recognized today.

Another aspect of the relationship between forest utilization and forest management merits attention. This is the responsibility of the forest utilization expert to find ways of utilizing all the products of the forest. This responsibility exists if the utilization expert intends to consider himself as part of the forestry profession and desires to play his appropriate part in the practice of forestry.

No utilization expert is needed to find a market for the best material in the forest. What is wanted is an expansion of markets for the less desirable tree species and individual stems and for material of small sizes.

The attitude in the past among utilization experts too often has been let the forest managers grow high grade material and we will help them sell it. This type of buck passing fails to recognize a fundamental fact of forest ecology, namely that high quality trees of the most valuable species cannot be grown without also producing either many trees of less desirable species or many poor trees of the valuable species, or more likely both.

The forest manager attempts to grow the highest possible percentage of first class material. This is least difficult of accomplishment in forest types where climate and soil restrict composition to only one valuable tree species—as for example in the ponderosa pine type. Yet even in such cases the forest manager is likely to find that part of the production is low grade and difficult to market in the volume which should be removed from the forest.

If this is the case in the pure relatively simple types, like ponderosa pine, the situation becomes really critical in the complex mixed forests which prevail in regions of abundant rainfall and fertile soils. Here good forest practice must be intensive and demands complete utilization of the contents of the forest.

The forest manager frequently has to deal with existing forests containing as many as twenty tree species of varying marketability. His success in growing better timber will depend upon his ability to cut and market the poorer material which occupies space to the exclusion of the more valuable trees.

As time passes, with skillful forest management, the percentage of the yield composed of the best species and grades should increase. But this is possible only if the lower grade material can be utilized.

It is in solving this problem that the forest utilization expert is needed. This is his responsibility. Will he measure up to it?

When and wherever that happy day arrives, allowing complete utilization of all the products in the forest, then the responsibility of the forest manager will be much enlarged. Being able to market any portion of his forest capital the range of management possibilities widens. The forest manager can demonstrate his competence through selection of the best species to favor, of the products to be grown, of the age at which they are to be harvested and of the methods of crop production to be employed.

The demand and need for well trained forest managers should increase as full utilization of all the products in the forest becomes possible. The possibility of 100 percent utilization of the forest can result in creating a brush field or a barren area if forest managers are not available to supervise and channel such utilization along the lines of sound forest management, thus providing for a continuous supply of forest products.

Forest management can operate only on the basis of utilization of forest products. Forest utilization, particularly if potentially complete, must be controlled by forest management for the preservation of the appropriate growing stock and its improvement.

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More on German Periodicals

In the March 1951 JOURNAL OF FORESTRY there is a useful article by Mr. Recknagel[1] about German forestry periodicals. In the light of certain information available from our record, I venture to submit these notes:

Zeitschrift für Weltforstwirtschaft, Hamburg.—We have recently been informed by the publishers that publication ceased with Vol. 13, 1950.

Forstwirtschaft - Holzwirtschaft.—This is definitely continuing at present, the latest issue received here being Vol. 5, No. 3, March 1951.

Forstwissenschaftliches Centralblatt.—The latest issue received here is Vol. 70, No. 2, 1951.

Holz-Zentralblatt.—I do not think this paper has stopped appearing. Recent issues have been seen. Our own subscription ended with Vol. 76, No. 77, 1950.

Forstarchiv.—This periodical, having resumed publication, is appearing regularly. The latest issue here is Vol. 22, Nos. 3-4, March 1951.

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[1]Recknagel, A. B. Status of German language forestry periodicals. Jour. Forestry, 49:208-9. March 1951.

Points of View

Comment on "A New Method of Volume Regulation"

Reading the paper "A New Method of Volume Regulation," I was interested in the manner in which Prof. Barnes applied the principle of the average weighted age of growing stock which Judeich employed in his *Bestandwirthschaft* about 1865 in South Germany. The object of this method was not to cut a steady yield from an abnormal age-class distribution during the first rotation, but to harvest periodic yields which decreased or increased according to the distribution, until this was brought to the normal for the rotation and would provide a sustained yield. However I worked out what Judeich would have started by cutting from each of the forests for which Barnes provided data, and it occurred to me your readers might be interested to see the results.

It will be remembered that Judeich regulated his cut by the area and volume of a periodic block selected to be regenerated by a shelterwood strip system in a regeneration period chosen to suit local conditions. The area of the block was calculated as

$$\frac{\text{Total area of felling series}}{\text{No. of regeneration periods in the rotation.}} \times \frac{\text{Actual average age of stands}}{\text{Normal average age } (\frac{1}{2}\text{-rotation})}$$

(In America the term "age class series" would presumably be used for "felling series.") A block of this area was then built up by selecting sufficient stands from a list drawn up in order of their priority of need for regeneration. At the top of this list were, of course, over-mature stands and unsatisfactory ones which would be better replaced. The average annual cut for the period was then calculated according to Cotta as the volume standing on the block at the beginning plus its increment to the middle of the period, divided by the number of years in the period.

I have used the data given by Barnes in each case, treated each hundred acres as a felling series, and assumed for simplicity regeneration periods of 10 years each, giving ten periods in the 100-year rotation. The order of the stands for felling had to be based solely on age, which would probably not be so in practice. The results are unadjusted for defect, breakage, and improvement in stocking.

CASE A.—

Area of first regeneration block

$$= \frac{100}{10} \times \frac{30}{50} = 6 \text{ acres.}$$

Composition and present volume of block:

	M.B.M.
5 acres 120/140 age-class carrying	280.0
1 acre 100/120 age-class carrying	52.2
6	332.2

Annual Cut = [332.2 + 5 years' increment on 332.2 (at 2.8 percent = 9.3)] ÷ 10 = 34.1 M.B.M.
(*cf.* 33.0 by Barnes' time computation).

The Judeich cut is for 10 years only, after which a fresh calculation would be made, but it may be that I have allowed too much increment. In the yield table used in the paper the increment put on the 130-year normal yield by the 135th year is 2.8 percent of the 130-year yield, but I note that the figures for the time test in Table 2 of the paper are calculated from normal, not actual, stands, and the cut from the oldest 10 acres during 16.4 years is shown as 539 M.B.M., whereas the stock on this area at the beginning was 541 M.B.M. according to Table 1.

Case C.

With no increment being put on in the first period the calculation can be made with more certainty of comparison.

Area of first regeneration block

$$= \frac{100}{10} \times \frac{37}{50} = 7.4 \text{ acres}$$

Volume on 7.4 acres of old growth = 333 M.B.M. to be cut in 10 years, an average annual cut of 33.3 M.B.M. compared with 33.0 calculated by time computation.

Case B.

Here Judeich would have reduced the excess capital very much more quickly, unless he had decided that some of the old stands could be retained with advantage while he regenerated younger, less satisfactory ones.

Area of first regeneration block

$$= \frac{100}{10} \times \frac{70}{50} = 14 \text{ acres}$$

Volume on 14 acres of the 120/140 age-class = 840 M.B.M.
Annual cut = 840 + 5 years increment on 840 (at 2.8 percent = 23.5) ÷ 10 = 86.3 M.B.M.
(*cf.* 48.0 by Barnes' time computation).

The periodic yield would have been reduced gradually until eventually the normal, or "desired" (Chapman 1950), yield from a normal series for a 100-year rotation was reached. This is apparently 428 M.B.M. for a 10-year period with an average stocking ratio of 0.684.

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[1]Barnes, George H. A new method of volume regulation. Jour Forestry 49:272-277. April 1951.

Selling Has Priority

After rereading Chapmans article "Should Small Woodlots be Managed for Sustained Annual Yield?" in the May JOURNAL[1] I decided the two thoughts expressed —silviculture and economics applicable to woodland—must have been tossed together with tongue in cheek.

H. H. Chapman has been around too many years not to know that there is a distinct difference between "practical forestry" and the academic evaluation of a job to be done irrespective of intervening obstacles. Selling the job has first priority.

That a theoretical case can be

[1]Chapman, H. H. Should small woodlots be managed for sustained annual yield? Jour. Forestry 49:343-344, May 1951.

made of this subject is partially illustrated. From the "applied forestry viewpoint" the presentation is wide open for letter writers like myself. Why write? Solely because there are all too many who will read this article by one of our profession's outstanding deacons and accept his presentation as being wholly factual in terms of today's needs.

I am reminded of a statement that I often hear from the casual observer or the defeatist type of individual: "Why be concerned about tree planting, Mother Nature will do the job." That is a true statement for most of the forested regions, but it does not answer reforestation questions. Natural regeneration—surely, but what about time, economic and social values?

Chapman bases his case on silviculture and economics. There is more, much more, to the proposition. Are we to overlook or forget that man, the woodland owner, must first be "violently bent and twisted into shape?" There is need for realism. Knowledge of silviculture, of tree economics, of the sum of the two—woodland management—is not alone enough. The application of this knowledge rests entirely upon acceptance or rejection by the woodland owner of the forester's proposals.

It is not so much a matter of being professionally correct in our silviculture, but rather the recognizing that there is a requisite, in the form of a mental seed bed, in which conservation ideas must be sown to grow into appreciation and bloom into action.

The real question is "How can we get woodland owners to become forest conservationists?" and not Chapman's question rephrased, "Is the principle of 'sustained annual yield' good silviculture or economics for woodlots?" The questions are with us today. The first job is educational.

Chapman's thesis is that farmers (4 million of them) are not interested in an annual or a short (2 to 5 years) periodic income. Such an assumption ignores what constitutes the basis for farming. Farming, as a business, seeks to employ labor annually at a profit in putting to use a parcel of land. Land is the factory. Growing crops, within the capabilities of the land (farm), and their harvesting and processing, provides for annual labor input. The success of the business depends to a large extent on managerial ability of the owner to employ himself and others profitably at least 250 days a year.

Not half the nation's farmers keep fully employed. Harvesting woodland products would increase days of employment. Studies have shown that such employment nets a dollar return commensurate with that from other farm crops. It is not so much the questions of whether it is practical to advocate annual harvesting of the woodland or whether the farmer will use the axe or saw, but rather a question of whether or not the farmer has tree crop capital to manipulate for a harvest, whether or not he is even interested.

Woodland survey reports are repetitious in stating that woodlots are over-grazed and under-stocked and have been "mined," leaving low grade capital. Summaries state that woodlot productivity can and should be increased three to four times. That farmers are generally indifferent to their woodland acreage is well established by reference to today's farm foresters' reports. It is these facts with which we should be concerned. It is not so much a matter of annual vs. periodic yields, or good silviculture vs. some rule-of-thumb form of tree management, as it is securing farmer audience and developing appreciation of the fact that not alone are there potential dollars to be reaped from the woodlot, but also that many other values, particularly watershed influence are of concern to all.

Farm foresters, extension foresters, and soil conservationists have as their first and priority objective selling appreciation. This cannot successfully be done if returns are of the future. Talking in terms of 10 to 15 years begets procrastination.

The farm forester, if he is to secure and hold attention, must talk about today, what can now be done and how to proceed this year and the years to follow by protecting, selecting, and removing the cripples, thinning for more rapid growth, and planning for the year's use of labor.

Chapman quotes Schlich; I am more prompted to quote Zon though space would not permit. Reread what this "humble worker in the vineyard of forestry" has to say in "Forestry Mistakes and What They Have Taught Us."[2]

The first job is to sell forestry, after which we can practice it.

A. C. MCINTYRE,
Regional forester,
Soil Conservation Service,
Upper Darby, Pa.

Wood is a Farm Crop

Events of the past few months have prompted me to bring out what is, in my opinion, the goal of the farm forestry program. The first event was a meeting of the Division of Private Forestry, Society of American Foresters in Washington, in December 1950. I want to give my recollection of what happened at that meeting.

The subject was farm forestry. Woodbridge Metcalf, prominent extension forester from California, discussed the subject of farm forestry during the past fifty years. He recited the struggle of foresters to get farmers to practice forestry in their woods. He told of his experiences in reviewing the accomplishments of farm forestry in various parts of the United States while on sabbatical leave from the University of California. His conclusions were decidedly pessimistic. As I interpreted what he said, foresters had very little accomplishment in the field of farm forestry about which to brag. In fact, it almost might be said that the accomplishment was zero. The foresters in farm forestry for the past fifty years have drawn what practically amounts to a goose egg.

The next speaker was a no-less prominent forester, K. E. Barraclough, extension forester of New

[2]Zon, Raphael. Forestry mistakes and what they have taught us. Jour. Forestry 49:179-183, March 1951.

Hampshire. He talked on the subject of farm forestry in the next fifty years. He did not refer to the report of the preceding speaker, but told us that more foresters should be assigned in the next fifty years to work with farmers, *if we were going to get the job done.* I do not remember his figures but my impression was that he advocated something like ten times as many foresters working in the field, to instruct farmers in the handling of their farm woodlands. The effect on me, at any rate, was rather startling because ten times *zero* is still *zero.* You cannot multiply a goose egg by anything I know of and come out with anything but a goose egg. It was evident that the two speakers had not attempted to coordinate their remarks. Perhaps it is unfortunate that they did not. Perhaps there really has been something wrong with the approach to the farm forestry program of the past fifty years. May it not be well to examine what fundamental weakness there has been in farm forestry instruction in the past fifty years and try to put it on a better basis before we multiply the number of foresters in the field attempting to instruct farmers in woodland management?

Is it possible that foresters know all about good silviculture and orthodox forest management but do not know enough about farm economics and farm problems? Is it possible that these relationships of forestry to the farm have not been fully grasped by the farm foresters? Perhaps they need the help of agriculturists who know about farms and farmers. And perhaps these agriculturists, if we could really get their cooperation, would be able to translate the foresters' ideas of woodland management into terms that the farmer could not only understand but accept and follow.

Do foresters really talk and teach the growing of wood as a farm crop? Most foresters agree that it is desirable for farmers to grow wood as a farm crop, and to handle it under the same general principles that other farm crops are managed. Let us examine the proposition of wood as a farm crop. What does it mean? Here is what I think it means.

1. The farmer must become the active manager of his woods. He must learn the techniques by reading, from demonstrations, and from the advice of local foresters, but he must not turn over the job of supervising the marking or utilization in his woods to foresters, contractors, or buyers of forest products.

2. He must train his regularly employed farm labor to do woods work when not needed for more urgent tasks.

3. He must acquire the necessary tools and machinery (or get them under rental or contract) to do his own logging with farm labor plus needed extra hired labor. (There will be some exceptions to this rule but they must be recognized as exceptions.)

4. He must arrange his farm schedule to permit annual cutting in the woods. This necessarily does not mean equal annual cuts but it does mean that the allowable cut for a 5- or 10-year period will not be exceeded.

5. It necessarily follows, from the foregoing, he must sell processed products, not stumpage. Products can be sold, delivered at the mill, railroad siding, the farm roadside, or a combination of these methods. Again there will be some exceptions, recognized as exceptions.

This is what I think we mean when we say the farmer should grow wood as a farm crop, and this, in my opinion, should be the goal of farm forestry teaching. We recognize forestry teaching as primarily the job of the Extension Service, but to become effective, it must be taught by all teachers of agriculture. Wood, as a farm crop, must become a part of the agricultural creed. Foresters must bend their efforts to get the cooperation of not only agriculturists but of wood buyers and users of wood so that it will be possible for farmers to market small or large lots of wood products. It can be done.

The second event that has prompted this article is one by H. H. Chapman.[1]

Farm forestry as discussed above would amount to "annual whittling," heartily condemned by the friend of all foresters and the beloved teacher of many, H. H Chapman. With all due respect to the prestige and notable accomplishments of Mr. Chapman, he could be wrong. Is there any real reason, silviculturally or otherwise, against the annual cutting by farmers? Mr. Chapman mentions two important reasons:

1. The margin for stumpage increases *per unit* of volume sold. This is quite true but the margin for profit also increases as wood products are processed. The farmer who sells stumpage lets someone else manage his woods He fails to acquire the habit of woods income as part of his annual income. Income experienced at long intervals does not become an integral part of the farm business. And that, in my opinion, is one of the fundamentals in the teaching of farm forestry.

2. Mr. Chapman says that woodland is an investment rather than a drawing account. Sales serve the purpose of getting funds to meet emergencies. I agree that this can be true. Farm woodlands can be managed in that way, but if they are, it will be much harder to establish forestry as a part of farm business and therefore, get it on a farm basis. Where emergencies occur, farmers will recognize the possibilities of increased revenue from their woods if they have developed a good growing stock. If forced to do so, they will draw on the capital represented by the woods growing stock to meet emergencies. But again, if the farmer does it with full recognition that it is an exception to the rule, a violation of the basic concepts of farm forestry, he will not continue the practice. The efforts of foresters should be to reduce the exceptions, rather than to teach that the woodland is an investment to be drawn upon for any and all emergencies.

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[1]Chapman, H. H. Should small woodlots be managed for sustained annual yield?—Jour. Forestry 49:343-344, May 1951.

Mr. Chapman says that efforts "to distort fundamental silvicultural requirements of a given species to fit the pattern of 'annual whittling' is nothing short of suicide, when such practices run counter to the demands of the forest types and the silvicultural systems that are indispensable if reproduction and perpetuation of the desired species is to be secured."

Why does "annual whittling" run counter to fundamental silvicultural requirements of a given species and hence become "nothing short of suicide?" He cites southern pine as an example. To get reproduction it is necessary to use prescribed fire or scarification of the soil and removal of competing hardwoods. "This means," says Mr. Chapman, "the advocacy of even-aged stands, or groups, growing in full light." Is there any reason why a farmer cannot scarify the soil, poison or cut hardwoods, or burn over a small patch and get his young pines in full light? If we teach that intensive management is the only kind of farm forestry worthwhile, the "annual whittling" puts the farmer in the woods studying the results that he gets from year to year. He will use the results to help him develop the growing stock that he wants. Constantly he will be watching for those young pines that he needs and when the time comes to get them and they are not there, what will he do? He will do what any good forest manager would do. He will read authorities like Chapman and begin to burn or scarify and remove worthless hardwoods and watch the pines start to grow. But if they do not come, he will plant them.

Perhaps Mr. Chapman, like the late Sir William Schlich whom he quotes, is thinking too much of big woods forestry and of stumpage sales. He assumes that the farmer is going to sit back and let the foresters manage his woods. Maybe "whittling" would be bad in such cases, because the farmer isn't managing his own woods.

Wood grown as a farm crop cannot become a reality unless farmers do manage the wood crop as they do wheat, corn, cotton, or cattle. For these latter crops they take the advice of experts but they remain the active farm managers. They know what to do and why they do it. We can put farm forestry on the same basis if foresters and agriculturists will agree on the goal, work toward it, and get the cooperation and help of farm leaders, agriculture teachers, and wood users. Only in this way can we make the equation "10 x 0" equal some tangible accomplishment. The lesson of the past fifty years (that goose egg) should influence foresters to tackle farm forestry from a different angle. I offer, not a new goal, but a new approach to the fundamental problem—growing wood as a farm crop.

JOHN F. PRESTON,
Dickerson, Md.

Losses of Cropland Acreage

In the May 1951 JOURNAL OF FORESTRY, M. H. Collet calls attention to the considerable loss of forest cropland acreage to power line rights of way.[1] It is a timely article.

This loss is indeed considerable but is only one of several such losses, all of which will continue to increase for some years. An important one is that caused by highway extensions—new roads, wider roads, and realignments. For a 100-foot cleared right-of-way, every 435.6 feet of length represents an acre of loss. For every mile of such a clearing the loss is about 12 acres.

More and more airplane landing strips and fields are being built. Many of them are clearings in forest cropland.

With improvement of highways and automobiles more people are able to get away from the cities to week-end cottages in the forest. In the Sierra Nevada upper foothills, for example, where there is a longitudinal strip of magnificent second-growth ponderosa pine, large areas are being subdivided for summer home sites. On some of them it will be possible to get a small amount of marketable stumpage but in general they will be closed to commercial timber production and harvest. National forest recreation areas, summer home sites, reserved road-side and stream-side strips, and public camping areas are in the same category as privately owned reservations and all are removing timber growing acreage from the most productive sites.

State and local park extensions likewise remove cropland. In the redwood region, for example, there will be a total of 10 percent of the remaining old growth lands reserved in their natural condition when the desired program is completed. This area includes the very best growing sites.

Some town and village extensions will have to be cleared from forest acreage; and some clearing for stockraising and general agriculture is still to be expected.

Logging roads and logging camps remove additional acreage.

All these losses to productive areas are inevitable as the forests are developed and as people satisfy their needs for travel and recreation. It is impossible to predict what the acreage losses will be but, since they are considerable, some allowance must be made in figuring total predicted yield. For example, a new lumber company, having bought 50,000 acres of virgin or second-growth timber cannot compute yield on the basis of acres owned, but should reduce the figure by the acreage of required permanent roads, administrative and operating areas, and the like. It may have to make a further reduction if a public highway should be located across its property.

EMANUEL FRITZ,
University of California.

[1] Collet, M. H. Power lines reduce forest acreage. Jour. Forestry 49:361, May 1951.

Reviews

Wildlife Management.

By Ira N. Gabrielson. 274 pp. Illus. The Macmillan Company, New York. 1951. $4.50.

Dr. Gabrielson, president of the Wildlife Management Institute, Washington, D. C., has drawn from his long experience in the field of wildlife management to write another one of his series on this subject.

The first two books printed since his retirement from the directorship of the U. S. Fish and Wildlife Service were *Wildlife Refuges* and *Wildlife Conservation*. This book is a sequel to the previous works. Some might dispute the selection of the title. They might prefer to think of this book as a history of wildlife management rather than a handbook or textbook setting forth the techniques and principles and their method of application. Actually, the book describes in chronological order the development of wildlife management by treating the broad principles which have been employed up to now in improving conditions for wildlife, particularly game fish, water fowl, and upland game species. It goes to some length to describe and discuss the various "hobbies" which have been employed by wildlife officials in this country since its settlement.

On such controversial matters as predation, bounty payments, sanctuary, and refuges, Dr. Gabrielson takes a very objective stand. He is careful to point out any advantages these practices may have as well as the weaknesses which have caused some of them to fall into some disrepute with present day technicians.

The photographs scattered through the text are excellent and emphatically illustrate some of the points which Dr. Gabrielson makes.

The book makes good general reading. I would strongly recommend it for many sportsmen's groups with which I have had the privilege of meeting. Land managers will find it especially useful since they cannot separate the manipulation of the land from its effects on the wildlife using the land.

If I were teaching a course in wildlife management, I doubt very much if I would use the book for a text. However, I would certainly put it on the required reading list for students taking such a course.

RICHARD M. MAY,
Soil Conservationist.

Forest Products.

By A. J. Panshin, E. S. Harrar, W. S. Baker, and P. B. Proctor. 549 pp. Illus. McGraw-Hill Book Co., Inc., New York. 1950. $6.

Four well-recognized wood technologists painstakingly checked the scattered fragmentary current literature and industrial operations in preparing a most up-to-date text on the more important phases of forest products utilization. Published as the first wood products book in the American Forestry Series, it is destined to be a valuable contribution to the basic understanding of forest resource utilization and to the training programs for both forest managers and wood products technologists.

In a precise and practical manner the authors wisely chose for major emphasis the principal primary and secondary forest products from the many variable products and processes used in the conversion of wood. Detailed information on raw materials, methods of preparation, manufacturing operations, specifications and special requirements are given for many common products such as poles, piling, posts, mine timbers, wood fuel, railroad ties, shingles and shakes, veneer and plywood, tight and slack cooperage, and excelsior. Such major topics as lumber manufacturing, wood preservation, and wood building construction were intentionally omitted due to space limitations and available information. Of special interest is the detail, characteristic throughout, given to such minor products as pencils, matches, toothpicks, wood flour, hogsheads, woodenware, tanks and vats, and veneer baskets.

Significant welcome additions to technical treatment of wood are the chapters on pulp and paper manufacture, naval stores, thermal and sound insulation, cellulose filaments and film, wood in the plastics industry, wood saccharification, wood waste utilization, wood furniture, tannins, and dyes. These and many of the other chapters are interspersed with chemical conversion information indicating the trend toward greater chemical utilization and the need for additional chemical training in the wood products technology field.

Of the four major sections, "Economics of Forest Utilization" contains the most far-sighted, perhaps provocative statements. Practices of timber resource exploitation, an important factor in the growth and development of the country as well as the wood industries, have promise of being replaced with a "realistic" solution involving complete and efficient utilization of all timber grown on forest lands. Such a solution, intermittently tackled at present, is a codominant challenge to the long-range planning and ingenuity of forest land management, wood industry management, and research workers. Wood residues and the related problems of wood utilization research are an integral part of this solution as is the need for greater integration of forest management with forest products industries and the reaffirmation of the dependence of wood industries upon an adequate supply of raw materials.

Among the desirable features of the book are the "selected references" lists following each chapter which indicates sources of further details and verify the authenticity of the material presented. Numer-

ous photographs, diagrams, tables, and conversion process flow charts enhance the value of the text for general college courses in this field. The technical and practical aspects of the book will also prove of value to many men in wood-using industries.

ROY M. CARTER,
North Carolina State College.

Families of Dicotyledons.

By Alfred Gunderson. 237 pp. Illus. Chronica Botanica Co., Waltham, Mass. 1950. $4.75.

Docteur (Univ. de Paris) Gundersen had worked with botanic gardens for about fifteen years before the publication of J. Hutchinson's *Families of Flowering Plants — Dicotyledons* in 1926. This, and other important works, intensified Gundersen's interest as he travelled North America and Europe in search of plants for the Brooklyn Botanic Garden. His book represents the considered suggestions of a life-long study of plant relationships. Rather than being an arbitrary and individualistic treatment it is more in the nature of a review of evidence, then the presentation of a tentative conclusion.

A background for discussion is laid by Arnold (fossil dicotyledons), Tippo (wood anatomy), Just (carpels and ovules), Copeland (embryology), Taylor (cytotaxonomy), and Camp (plant geography). After this comes a brief survey of the important dicot characters and their use in phylogeny. Two short chapters sketch the history of classification, giving salient features and differences of the principle systems. Finally, the dicot families of the world are described in 156 short pages. The family descriptions follow a concise scheme of abbreviations and brief citation that condenses a large amount of information. Under each family discussion a sort of "synonomy" is given, carefully cross-referenced to other systems and critical researches.

Although nearly every page carries numerous references to the work of others, the manner of citation is varied. At the beginning of the section "Literature Cited" it is explained that there is no attempt at completeness before 1925. Sources of more comprehensive bibliographies are given, according to subject matter fields. In the text sometimes only the author's name is given, or the name and the year. A few errors have crept into this mass of references, *e. g.* Pool's name misspelled and his most recent revision not cited. Apparently the centennial (8th) edition of *Gray's Manual* was not available during writing.

The line and shaded drawings illustrating the characters of the families are clear and instructive. They have nearly all been made from living plants and some differences between buds and mature flowers may suggest evolutionary trends. About one family in three or four is illustrated, but most of the orders are figured.

Dr. Gundersen tends toward the Besseyan system in beginning with Magnoliales, giving intermediate rank to unisexual catkin-bearing and other apetalous families, and strongly emphasizing a phylogenetic system based on all available modern evidence. The evolutionary significance of derived wind-pollination is not clearly apparent. His tendency seems to be toward simplification and reduction of the number of families. The total is 240, with two genera *incertae sedis*. This contrasts with Bessey (1915) 254; Hutchinson (1926) 264; Wettstein (1935) 261; and Diels (1936) 259 families. There are three legume-bearing families; the Ericaceae includes *Monotropa* and *Pyrola;* and there are only three families in the Asterales.

The "Concluding Remarks" is a plea for an International List of Plant Families (alphabetical and numerical) to give uniform name and scope. This list would give a practical stability that would simplify work; it would be under the jurisdiction of a group such as the International Association of Plant Taxonomists.

PAUL C. LEMON,
N. Y. State College for Teachers, Albany.

Proceedings of the Alaskan Science Conference.

216 pp. National Research Council, Washington, D. C. 1951 $2.

A three-day conference on scientific research in Alaska was held in Washington, D. C. during November 1950 under the auspices of the National Academy of Sciences and the National Research Council.

Attended by nearly 400 scientists, the conference included sessions on biological sciences, physical sciences, and social sciences. Forestry was one of the biological sciences featured on the program.

Among the papers presented by foresters were the following:

"Alaska Forest Research Problems and Program" by Raymond F. Taylor.

"Pathology in the Future Forest Practice in Alaska" by Dow V. Baxter.

"Ecological Effects of Forest Fire in the Interior of Alaska" by Harold J. Lutz.

"Forestry in Alaska" by B. Frank Heintzleman.

In addition, other foresters participated with comments including Sam R. Broadbent, William A. Dayton, George R. Phillips, and Lyle F. Watts.

Among the recommendations made by the conferees were several calling for increased research in forestry and in the plant sciences.

Published as Bulletin 122 of the National Research Council, this *Proceedings* provides valuable reference information in condensed form on the problems and opportunities in arctic and subarctic research.

Route Surveys.

By Harry Rubey. 597 pp. Illus. Macmillan Company, New York. 1951. $4.25.

Logging engineers and other foresters concerned with road location will find in the new revised editions, additions of special interest. They include the tangent offset and middle ordinate tables originally compiled by Lester Calder of the Weyerhaeuser Timber Company, together with text instructions on their time-saving use in staking curves

with a tape, and a chapter on "Aerial Photography in Route Surveying" by Talbert Abrams, president of the Abrams aerial survey and instrument corporations. Tables of eight-place natural sines and co-sines have been added which will be useful in triangulation computations and converting from geodetic to plane coordinates. Also helpful in ground control for photogrammetry operations is the section on the use of the Paulin and other altimeters, and tables for air temperature correction for barometric leveling.

Subtitled *A Pocket Book for the Survey, Design and Construction of Railways, Highways, Tramways, Beltways, Canals, Flumes, Levees, Pipe Lines, Transmission Lines, and Other Route Constructions*, the revised edition has 315 pages of text and 282 pages of mathematical tables. Nine of the 21 chapters are devoted to the fundamentals of horizontal circular and spiral curves and parabolic vertical curves, and cross-sectioning and earthwork yardage computation. The tables include all required for field and office use in road location.

A feature of the book is that it carries through both the arc and chord definitions of curves in parallel so that it may be used with equal facility for either system. The tangent and external corrections have been changed from the diagram in the previous edition to a more convenient tabular form. The author is chairman of the Department of Civil Engineering, University of Missouri, and his book admirably serves the dual purpose of a textbook for the student and a manual for the practicing surveyor.

The only fault the reviewer finds with the revised edition is a fifty percent increase in thickness which necessitates an out-size pocket to carry this "pocket" book in the field. However he appreciates the easily-read type which is larger than the type used in most pocket books, and the substantial paper on which it is printed should withstand hard usage.

J. KENNETH PEARCE,
University of Washington.

Plant and Soil Water Relationships.

Paul J. Kramer. 37 pp. Illus. McGraw-Hill Book Company, New York. 1949. $4.50.

Here is a text that takes the reader underground and into the internal structure of plants for a thorough exploration of the fundamental principles of soil and plant-water relationships. Those with a claustrophobia should beware of this book for once the author delves into the soil in the pursuit of water there is no escape. Even in discussions of water losses through the plant by way of transpiration, attention is focused almost entirely on the internal plant processes. Foresters and other workers who are concerned with the absorption of water by plants, however, should welcome this new text as a valuable reference.

Following a brief chapter on historical concepts of plant-water relations, the author devotes the next three chapters to the soil and soil-moisture relations. The first of these is in effect a condensed text on the most important facts about soil as a body for receiving, storing, and transmitting water. Next is an equally concise chapter on the major factors affecting the supply of soil moisture. This is followed by a description of the numerous methods that have been developed for measuring soil moisture.

Chapters 5 to 8, inclusive, are devoted to plant-water relations. The author logically starts with an explanation of the structure and growth of roots. He then discusses the several factors which affect the development of root systems, mainly external. In the next two chapters, attention is focused on the internal process of water absorption. Here, fortified with a background of some twenty years of research, the author presents evidence concerning secretory and osmotic theories of root pressure and other aspects of water intake by plants. In summarizing this evidence the author concludes that ". . . the intake of water is not a special function of the root cells but is a function of the entire plant, the root cells merely providing an absorbing surface through which water is absorbed."

Following these chapters on the internal processes of absorption the author then shifts attention in Chapter 9 to the external factors which affect the absorption of water. Included among the factors discussed are moisture content, aeration, temperatures, concentration and compaction of soil solution, as well as the efficiency of roots. Absorption of nutrients and the effects of solutes on absorption process is covered briefly in Chapter 10. In the final chapter the author discusses the effects of absorption deficits on plants but mainly on internal plant processes.

The author has kept his book to less than 300 pages of text, which is moderate for covering so complex a subject as plant and soil water relationships. Subspecialists and students will find the text readily understandable. The 50 line charts and diagrams interjected through the book further help to summarize in graphic form the most important relationships involved. For those who wish more detailed information the author presents a list of 556 references. This comprehensive list of references together with the logically presented highlights in the text make this book a useful working tool for those who need to consider the basic facts about soil and plant-water relations in planning land use programs.

GEORGE W. CRADDOCK,
U. S. Forest Service.

Directions for the Preparation of Management Plans for Farm Woodlands in Finland

By N. A. Osara. 69 pp. Illus. Central Forestry Association, Tapio Helsinki, Finland. 1948. (In Finnish.)

This booklet was prepared to guide the preparation of management plans for farm woodlands by a man who has had many years of practical experience in farm woodland management and who now heads the Central Forestry Association, Tapio. Although only Finnish conditions are considered,

American foresters may be interested in the methods used in farm forest management in Finland.

Because forest income constitutes an essential part of the economy of every Finnish farmer, and because timber, pulp, and paper are the most important industrial products of the country, special attention is paid to the management of farm forests on a sustained-yield basis. The techniques employed for this purpose are briefly outlined.

A reliable farm woodland map is usually prepared. The scale is usually 1:4000.

The necessary information about soils, volume, average annual increment, and silvicultural conditions of stands is obtained by parallel line transects and circular sample plots. The age and silvicultural conditions of stands are expressed by a simple formula. Sites are classified on the basis of the ground cover vegetation, or forest type system of Cajander.

The former utilization of farm woodland is investigated, and farm consumption needs are determined. Particular attention is given to the problem of grazing. The management plan must indicate a solution to the grazing problem. This is achieved either by clearing a certain portion of the farm woodland, or by converting a certain portion of cultivated land to pasture.

Ordinarily, the periodic cuts are determined on the basis of growing stock, increment, and the silvicultural condition of stands. In emergency cases, however, consideration is also given to the immediate farm needs and the financial status of the owner. The determination of annual cut is supplemented by detailed directions pertinent to all cuttings and silvicultural measures to be conducted over a period of ten years. Special stress is placed on presenting information in a simple, easily understandable form.

The program of farm woodland management is entirely voluntary, and the work is performed by a government-paid technical forester. During the period of survey and mensuration studies the farm woodland owner provides the necessary unskilled labor. Once the forest management plan is prepared and approved by the local forestry commission, the farm woodlot owner is under obligation to cut his timber in accordance with the recommendations.

An English translation of the booklet in summary form may be obtained from the Extension Forestry Office, University of Wisconsin, Madison 6, Wis.

PEITSA MIKOLA,
Forest Research Institute of Finland, and
University of Wisconsin.

International Rules of Botanical Nomenclature.

Formulated by the International Botanical Congresses of Vienna, 1905; Brussels, 1910; and Cambridge, 1930. Adopted and revised by the International Botanical Congress of Amsterdam, 1935. Compiled by W. H. Camp, H. W. Rickett, and C. A. Weatherby. 120 pp. The New York Botanical Garden in cooperation with the American Society of Plant Taxonomists. 1947. Reissued 1948 by Chronica Botanica Co., Waltham, Mass. Cothbound. $3.50.

The three compilers named represented, respectively, the Committee on Nomenclature of the American Society of Plant Taxonomists, the Editorial Board of the same Society, and the Chairman of the Committee on Nomenclature of the Botanical Society of America. The immediate impulse, however, was the formation in 1946 of a Committee on Plant Nomenclature by the American Society of Plant Taxonomists, one of whose objectives was to replace the out-of-print *International Rules of Botanical Nomenclature* (as revised at the Cambridge Congress, England, in 1930), published in Jena, and adding thereto the Amsterdam Congress revisions of 1935.

This new edition of the *Rules* is largely a facsimile of the original edition aside from some minor rearrangements of material and the fact that Amsterdam Congress delections are indicated by dots (. . .) except where new material was substituted, while such new material is put in boldface or small caps, depending on the individual case. Moreover only the English section appears, the French and German sections being omitted. In addition, a very useful appendix is added, giving an alphabetical list of conserved generic names and the names they replace, also a much improved index.

Among the more important nomenclature contributions of the Cambridge Congress of 1930 was the list of Linnean generic lectotypes, wherein, among others, certain tree genera — such as *Acer*, *Celtis*, *Juniperus*, *Pinus*, *Quercus*, *Tilia*, and *Ulmus*—were typified; the provision for certain committees (for example ones to draft lists of ambiguous and confused names), and the clarification of the rules regarding effective publication.

The Amsterdam Congress of 1935 adopted a resolution to appoint an international committee to draw up a list of economic plants that would "remain in use for a period of ten years." This resolution, incidentally, was never carried out. It outlawed provisional names and, beginning with January 1, 1935, names originally published without a Latin diagnosis. Some further revision involved the retention of the original gender of Greek or Latin generic names, some additions to conserve generic names, and acceptance of a list of 186 conserved family names.

It seems appropriate at this point to record some rather informal reminiscences of the nomenclature sessions of the 7th International Botanical Congress at Stockholm in July 1950, which I attended as a delegate of the U. S. Forest Service, the Society of American Foresters, and the Ecological Society of America.

The nomenclature sessions were under the joint presidencies of Drs. Elmer Drew Merrill of the United States and Thomas A. Sprague of Great Britain, with Dr. J. Lanjouw of the Netherlands as acting rapporteur general, and were held more or less simultaneously with meetings of the Botanical Section of the International Union of Bio-

logical Sciences. The discussions revolved around a 255-page book *Synopsis of Proposals* for changes in the *International Rules of Plant Nomenclature*. Actually the discussion dragged on for eleven and a half days, often at night. I was allotted three votes. Actually only ten formal ballots were taken, other votes being by show of hand. It was decided at the start that no proposal would be discussed which failed to receive at least one-third of the votes on preliminary balloting held last year unless the proposer or his proxy wished to discuss the matter further personally or there was a vote for reconsideration. Not being legalistically minded, I frankly found much of the discussion a bit tiresome. For example, it took about two hours to discuss whether the phrase "individual plants" or "plant individuals" should be used. Fortunately the proceedings were enlivened occasionally; for example, laughter over some of the obviously inconsistent votings in preliminary balloting. Once the meeting adjourned to another building to hear a distinguished botanist who failed to show up because of an "indisposition" cured miraculously overnight. In two days only about 40 pages of the book mentioned had been covered.

A special committee, headed by Dr. Wendell H. Camp, who is president of both the American Society of Plant Taxonomists and of the American Horticultural Council, brought in an excellent thorough revision of the rules governing names of cultivated plants, a report which, surprisingly enough, finally passed but not without some protest. Article 18, on the type method, was revised, improved, and clarified. A number of new terms, such as *taxon* (plural, *taxa*) to cover any taxonomic status, and *nothomorph*, to cover a subdivision of a hybrid "species," were adopted. The principle of compiling lists of ambiguous, confused and dubious names was rejected, majority opinion being that these are matters which should be left to individual judgment. Art. 28, bis, was revised to repeat the trivial name of a species, without author, for the type variety of a species. A recommendation was adopted uniformly to lower-case specific ("trivial") names, which puts botanical usage in line with that of the U. S. Department of Agriculture and the Government Printing Office.

The principle of conserving names of certain outstanding economic plant species was bitterly debated. I made a speech in favor of it, citing my paper on "The Names of the Giant Sequoia." My opponents were roundly applauded! In the end the proposal was defeated by a vote of 242 to 116. Dr. Camp, who naturally played an important part in the nomenclature sessions, voiced my personal sentiments by coming up to me and asking "Bill, what's the matter with these taxonomists?" At the closing session he reminded the systematists that they had given this answer in the face of the pleas of horticulturists, foresters, and other practical workers with plants and, at the same time, had formed the International Society of Plant Taxonomists which would appeal for financing, among others, to UNESCO, horticultural and forestry organizations, experiment stations and the like, which are not headed up by systematic botanists, and that they might find their prospective patrons unsympathetic. The sessions closed by leaving much of the business open to various committees, the editorial committee alone having much authority for rewriting and revising. As a placebo to the offended horticulturists, foresters, and others, a committee was set up to see if something could be done to placate them. I had myself expressed the hope, if *nomina specifica conservanda* were voted down, that the committee issue a standard list of economic plants authorized at the last Congress but never accomplished.

Owing to war fifteen years elapsed between the sixth and seventh international botanical congresses. If war does not again intervene, the eighth congress will meet in Paris in 1954.

WILLIAM A. DAYTON,
U. S. Forest Service.

Growing Woodland Plants.

By Clarence and Eleanor G. Birdseye. 223 pp. Illus. Oxford Univ. Press, New York. 1951. $4.

Having a woodland garden is the ambition of many persons whose hobby is amateur gardening. This book, simply worded and well illustrated, should aid this group in the pursuit of their hobby.

The stated purpose of the book—"to teach both novices and experienced gardeners to recognize, enjoy, conserve, cultivate and propagate, on any desired scale, approximately 200 species of wildflowers and ferns native to our American woodlands"—is well achieved.

In Part I the authors explain the interrelationships of trees, lesser plants, micro-organisms and soil in woodlands; they discuss the development of both large and small wildflower gardens and indicate when, where and how to obtain forest plants and suggest "swapping with nature" to dispose of garden surpluses and to re-establish wildflowers in areas where they have been eliminated.

Part II contains detailed, nontechnical descriptions of about 200 species of woods plants, well illustrated with drawings by Walter L. Graham. The habitat, range, blossom time, soil requirements and methods of propagation are given for each plant. The book is best suited to the Northeast, although many of the plants included in the book range westward and southward to include a much larger area east of Montana and north of Virginia. Although azaleas, rhododendron, Rhodora, and laurel are included, one cannot but wonder why many other attractive flowering shrubs are not included. The reviewer has found many flowering shrubs, not to mention some tree species with very attractive blossoms, worthy of inclusion in a "Who's Who" listing similar to that in the present book; viburnums, flowering dogwood, and members of the rose family, such as ninebark, spirea, chokeberry, shadbush, and wild plum, immediately come to mind.

Notwithstanding omissions similar to those mentioned and a few misspelled words *Growing Woodland Plants* will be found very helpful to anyone, within or near the area covered by it, who is contemplating a woodland garden, even for old hands who have been cultivating this hobby for years.

C. F. KORSTIAN,
Duke School of Forestry.

Current Literature

Compiled by MARTHA MEELIG, *Librarian, The New York State College of Forestry*

Range Management Section Compiled by FRANCES FLICK, *Library, U. S. Department of Agriculture*

General

Exploring the National Parks of Canada. By Devereux Butcher. 84 pp. Illus. National Park Assoc., Washington 6, D. C. 1951. Paper, $2.50; Cloth, $4.

A First Book of Tree Identification. By Matilda Rogers. 95 pp. Random House, New York 22. 1951. $2.50.

Fisherman's Spring. By Roderick Haig-Brown. 222 pp. Illus. by Louis Darling. William Morrow & Co., New York 16. 1951. $3.

Idaho Forests; Their Care and Preservation. 29 pp. Illus. State Forestry Dept., Boise, Idaho. 1951.

The Principal Laws Relating to the Establishment and Administration of the National Forests and to Other Forest Service Activities. Comp. by Harry Irion. 80 pp. U. S. Dept. of Agriculture. Agric. Handbook No. 20. 1951. 25 cents (Govt. Print. Off.)

Wooded Laboratories. By E. L. Palmer. 31 pp. Illus. State Univ. of New York College of Agriculture, Ithaca. Cornell Rural School Leaflet, Vol. 44, No. 4, Spring 1951.

World Forestry Atlas with English, French and German Text. By Franz Heske and Richard Torunsky. Series of full-colored maps 60 by 90 cm. publ. under auspices of the German Federal Institute of Forestry. 1950-1952. Subscription: Swets & Zeitlinger, 471 and 481 Keizersgracht, Amsterdam-C., Holland, and Mapleton House, Publ., 5415 17th Ave., Brooklyn 4. $3.50 per map (whole set only), about 50. Four now ready.

Conservation

Land Hunger in Mexico. By Tom Gill. 86 pp. Charles Lathrop Pack Forestry Foundation, Washington 6, D. C. 1951. $2.

Soil and Sky; the Development and Use of Tennessee Valley Resources. By M. H. Satterfield. 120 pp. Univ. of Tennessee, Knoxville. Record, Extension Service, Vol. XXVI, No. 3. Chapter IV. Restoration of the Region's Forest Resources. 1950.

Farm Forestry

Woodland as a Farm Enterprise. By P. I. Wrigley. 36 pp. Pennsylvania State College, Agric. Expt. Sta., State College, Pa. Bul. No. 536 and 536P. 1951.

Forest Economics

Timber Markets and Marketing in the Monocacy River Watershed of Maryland and Pennsylvania. By G. E. Doverspike, J. C. Rettie and H. W. Camp, Jr. 17 pp. Northeastern Forest and Range Expt. Sta., Upper Darby, Pa. Station Paper No. 41. 1951. Mimeog.

Forest Influences

Some Aspects of Watershed Management in Southern California. 29 pp. California Forest and Range Expt. Sta., Berkeley. Misc. Paper No. 1. 1951. Processed.

Forest Management

Forest Management. By H. A. Meyer, A. B. Recknagel, and D. D. Stevenson. About 250 pp. Maps and tables. Ronald Press, New York 10. Fall 1951.

Sampling in Tree Measurement Sales on Northern Region National Forests. By D. W. Lynch and R. A. Chapman. 47 pp. Rocky Mt. Forest and Range Expt. Sta., Missoula, Mont. Station Paper No. 27. 1951. Mimeog.

Forest Products

Markets for Forest Products in Central and North Georgia. By R. D. Dixon and E. T. Faris. 102 pp. Georgia Expt. Sta., Experiment, Ga. Mimeog. Ser. No. 22. 1950.

Forest Resources

The Forest Resource of Cass County. By Lynn Sandberg, A. G. Horn, and P. C. Guilkey. 59 pp. Illus. Office of Iron Range Resources and Rehabilitation, State Office Bldg., St. Paul 1, Minn. 1950.

Forest Resources of the Monocacy River Watershed of Maryland and Pennsylvania. By J. C. Rettie, G. E. Doverspike and W. G. Banks. 29 pp. Northeastern Forest and Range Expt. Sta., Upper Darby, Pa. Station Paper No. 40. 1951. Mimeog.

Protection

Inflammability of Chaparral Depends on How It Grows. By C. C. Buck. 1 p. California Forest and Range Expt. Sta., Berkeley. Misc. Paper No. 2. 1951. Mimeog.

A Training Course in Fire Behavior. 21, ii pp. Illus. California Forest and Range Expt. Sta., Berkeley. 1950. Mimeog.

Water vs. Fire; Fighting Forest Fires with Water. By A. G. Neuns. 36 pp. Illus. U. S. Forest Service, San Francisco, Calif. 1950.

Silviculture

The Influence of Seedbed Conditions on the Regeneration of Eastern White Pine. By D. M. Smith. 61 pp. Illus. Connecticut Agric. Expt. Sta., New Haven. Bul. No. 545. 1951.

Reproduction on Cut-Over and Burned-Over Land in Canada. By R. H. Candy. 224 pp. Illus. Canada Dept. of Resources and Devel., Ottawa. Silv. Res. Note No. 92. 1951.

Seed Production by Conifers in the Coastal Region of British Columbia. 47 pp. Illus. British Columbia Forest Serv., Victoria. Tech Publ. No. 35. 1951. 25 cents.

Tree Planting for California Forests and Farms. 22 pp. California Dept. of Natural Resources, Div. of Forests, San Francisco. 1950.

Wood Preservation

Studies on Coal Tar Creosote as a Wood Preservative. Part II. 43 pp. Forest Research Institute, Dehra Dun, India. 1950. Indian Forest Bul. No. 144, 1948. Rs. 3-14 or 6sh. 3d.

Wood Decay in Houses. By S. B. Silverborg. 19 pp. Illus. State Univ. of New York, College of Forestry, Syracuse. 1951. Single copy free; price for quantities on request.

Wood Technology

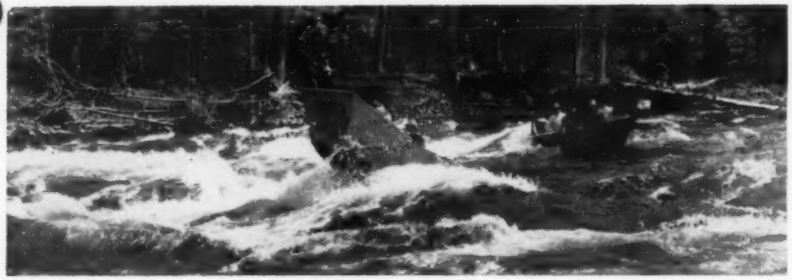
Chipped Wood Production and Uses. Northeastern Wood Utilization Council, New Haven 6, Conn. Bul. No. 33. 1951. $2.

The Preparation of Wood for Microscopic Examination. 8 pp. Illus. Great Britain. Dept. of Science and Industry Research, Forest Products Res. Lab., Princes Risborough, Aylesbury, Bucks. Leaflet No. 40. Rev. 1951. Free.

The Swelling Behavior of Conifer Tracheids and the Concept of a Skin Substance. By A. B. Wardrop and H. E. Dadswell. 24 pp. Illus. Australia Commonwealth Science and Industry Res. Org., Melbourne. Reprint No. 128 from Australia P. & P. Ind. Tech. Assoc. Proc. Vol. 4. 1950.

Wood Fuel. Northeastern Wood Utilization Council, New Haven 6, Conn. Bul. No. 35. 1951. $3.

CITIES WITH A FUTUR



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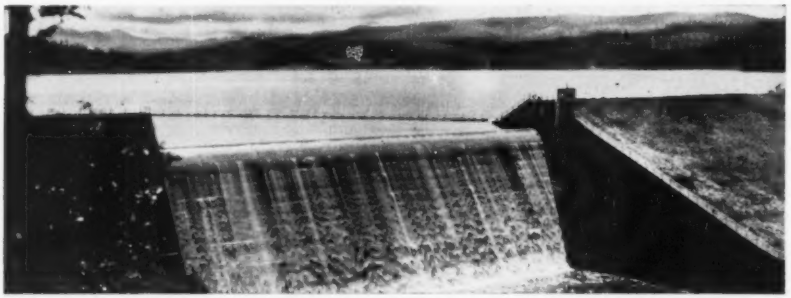

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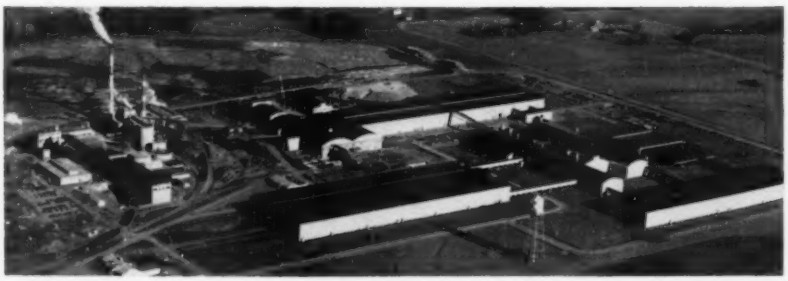

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Society Affairs

Compiled by ROBERT D. HOSTETTER, *Assistant Executive Secretary*

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Report of Council Meeting and Actions Taken

A meeting of the Council of the Society of American Foresters was held June 4 and 5 at Manitou Experimental Forest, operated by the Rocky Mountain Forest and Range Experiment Station, near Woodland Park, Colo.

Ten of the eleven Council members were present: President C. F. Evans, Vice President C. S. Herr, F. H. Brundage, D. B. Demeritt, S. G. Fontanna, F. H. Kaufert, C. Otto Lindh, G. D. Marckworth, DeWitt Nelson, and Earl Porter; together with Henry Clepper, executive secretary. R. E. McArdle was unavoidably absent.

Subject Divisions

At the Council meeting held June 19-21, 1950, the president was authorized to appoint a committee of the Council to study the organization of Divisions, particularly with respect to consolidations. The following members were asked to serve: S. G. Fontanna, chairman, C. Otto Lindh, and Earl Porter.

This committee made a preliminary report at the Council meeting on December 13, 1950, and invited comments from members, some of which were subsequently published in the JOURNAL.

After long discussion and careful consideration of the wishes of the members and of the need for providing forums where groups with special interests can meet, the Council decided that all existing Divisions should be continued and should meet every year. The Divisions of Education, Silviculture, and Forest Management shall arrange all-day meetings. The other Divisions shall be limited to a half-day meeting each, although any two Divisions may schedule joint meetings lasting a full day.

In keeping with the foregoing policy, the Council then approved a petition for the formation of a Division of Forest Management. On motion of Mr. Nelson, seconded by Mr. Demeritt, the Council voted unanimously to authorize the Division of Forest Management to cover the subjects of forest administration (including forest regulation, planning, cutting budgets, and administrative management), protection (including fire, insects, and disease), and mensuration (including growth and yield, inventories, surveys, photogrammetry, and mapping) not otherwise included in other Divisions and as set forth in the petition.

Prof. Stephen H. Spurr of the University of Minnesota School of Forestry, having initiated the petition for the Division of Forest Management, was asked to work up a program for the meeting of December 1951 and to serve as chairman pro tem until an election is held. Other interim officers appointed to serve until elections can be held are Vice Chairman Donald Young, Texas Forest Service, College Station, and Secretary L. N. Grosenbaugh, Southern Forest Experiment Station, New Orleans, La.

For the record, there follows the petition received by the Council and signed by 83 members.

At the Seattle Meeting of the S.A.F., a group of foresters discussed the need for a subject matter division of forest management, to include items in technical forest management (both public and private), administration, protection, mensuration, forest survey, and photogrammetry—items not included in present subject matter divisions.

A petition for a Division of Forest Measurements which grew out of this discussion, and which was signed by 67 members, was submitted to the June 1950 meeting of the S.A.F. Council. A committee on forest measurements was authorized by the Council, and the undersigned was later named chairman.

At the same time, a committee of the Council was established to look into the whole problem of subject matter divisions [Jour. Forestry 48(8):565]. In a report of this Committee to the Council, dated December 4, 1950, it was recommended that "There be created a new Division of Forest Management, which will include administration, protection, and forest measurements."

This petition is, therefore, being executed to render effective the recommendations of the Council Committee. The creation of this division would:

A. Provide a place in the national meetings for a discussion of problems in the broad field of forest management.

B. Provide a broadly constituted subject matter division, with which related divisions, if they so wish, may merge. Thus, the number of subject matter divisions may be gradually reduced to a more workable number.

C. Obviate the need for a Committee on Forest Measurements, and meet the objectives of the 67 members of the Society who signed the petition for a subject matter division in forest measurements.

We, the undersigned, hereby petition the Council of the Society of American Foresters to establish a subject Division of Forest Management.

At the Society meeting in Washington, D. C., last December, the Council met with the Division officers for the purpose of discussing Division or-

ganization, programs, and activities. Because of the value of maintaining such liaison between the Council and the Division officers, a similar joint conference was authorized at the forthcoming Biloxi meeting in December 1951. This action was unanimously approved on motion by Mr. Herr, seconded by Mr. Nelson.

Approved Curricula for Society Membership

At the Council meeting held in December 1950, the Committee on Accrediting (Myron Krueger, chairman) reported on the specific curricula in the accredited institutions which qualify graduates for Junior Membership in the Society immediately upon graduation. This was an assignment previously given the committee by the Council, and the committee's recommendations were approved by the Council as of January 1, 1951. (See the JOURNAL OF FORESTRY for February 1951, pages 143-144.)

Since publication of the list of approved curricula there has been considerable discussion of this action in the JOURNAL, and not a little criticism because graduates of certain curricula in certain institutions are not eligible for Junior Membership.

Prior to the recent Council meeting, Prof. Krueger was asked whether he had any changes to propose in the recommendations originally submitted by the Committee on Accrediting. He reported as follows:

> At the time of writing this letter (May 14, 1951) it appears that the action of the Council and the Committee on Accrediting, in designating certain curricula now being offered in forestry as not qualifying graduates for election to the Society of American Foresters immediately following graduation, is going to result in very thorough discussion of the whole subject. Unfortunately, most of the discussion so far seems to be confined to members of the teaching profession. Regardless of the ultimate outcome of this discussion I think it would be most unwise for the Council to do anything to alter the standards as expressed in the December 1949 issue of the JOURNAL. In my opinion these standards are thoroughly in line with the results of the referendum in the same year.
>
> Perhaps there would be some benefit if the Council were to go on record officially in asking the Committee on Accrediting to continue to interpret these standards somewhat liberally until such a time as the renewed discussion will have shown more clearly the wishes of the membership.
>
> In my opinion the Society of American Foresters and the forestry profession have reached a period in their development where it is necessary to take stock. Personally, I have definite and rather strong convictions as to the proper course for the future. However, I am merely one individual member of the Society. If the renewed discussion should prove that my viewpoints and the viewpoints of those who are like-minded are not the viewpoints of the majority of the membership, we shall certainly have to yield to that majority opinion. However, before the Council changes the standards as expressed in December 1949 we should be quite sure that there has been a real shift in the viewpoints of the members as expressed in the referendum.
>
> I am asking the other members of the Committee on Accrediting to express their viewpoints directly to you.
>
> MYRON KRUEGER, *Chairman, Accrediting Committee.*

On motion of Prof. Marckworth, seconded by Mr. Nelson, the Council unanimously requested the Committee on Accrediting to continue to interpret curricula standards as in the past until such time as renewed discussion or other action clearly demonstrates the desirability of a change. This action is intended to carry out the suggestion in the second paragraph of Prof. Krueger's letter quoted above.

Dr. Kaufert was invited to submit a proposed amendment to Bylaw 4 which would admit to Affiliate Membership graduates of utilization curricula immediately on graduation from accredited institutions where such graduates are not eligible for Junior Membership. (In some accredited schools, utilization graduates are immediately eligible for Junior Membership. Their eligibility depends on whether or not they have received the five professional courses: silviculture, protection, management, economics, and utilization.)

The foregoing action does not mean that the Council has adopted an inflexible attitude on present membership qualifications. To the contrary, continued discussion is invited. A considerable portion of the Society Affairs session in connection with the annual meeting at Biloxi next December 13 will be devoted to open forum debate on this important issue.

Membership Growth

The following excerpts are from a longer report submitted by Robert D. Hostetter, assistant executive secretary.

The net increase in membership during the six months from December 1, 1950 to May 31, 1951 was 991, the most rapid numerical gain ever recorded by the Society. Membership by grades on those dates was as follows:

Grade	December, 1950	May 31, 1951	Increase
Junior	3,315	3,441	126
Member	3,195	3,413	218
Fellow	57	55	—2
Student	0	613	613
Affiliate	209	234	25
Associate	198	206	8
Corresponding	52	55	3
Honorary	12	12	0
Total	7,038	8,029	991

Excellent work by Section membership chairmen and Section representatives at forestry schools has accounted for the recent rapid increases in total membership. Section membership chairmen, through their committees, have been successful in presenting the benefits of membership to fully qualified nonmembers, and the Section representatives at accredited forestry schools successfully launched the Student Member grade.

Total membership for each year since World War II was as follows:

Year	Membership	Percent increase
1945	4,382	1
1946	5,065	16
1947	5,690	12
1948	6,241	10
1949	6,628	6
1950[1]	7,038	6
1951[2]	8,029	15

[1]Members dropped for nonpayment of dues applying to both 1949 and 1950 were included in the 1950 record. Had just those members who were dropped for nonpayment of 1950 dues been included in that year's record, the increase would have been 10 percent.

[2]The membership shown for 1951 is as of May 31, 1951, the midpoint in the fiscal year.

About two-thirds of the 613 Student Members on May 31 are to receive degrees in June, thus becoming eligible for advancement to the Junior grade. Last year 34 percent of the 2,039 graduates of accredited forestry schools applied for Junior Membership during 1950. A similar percentage of the estimated 1,415 graduates in 1951 is expected to become Junior Members this year.

Little interest in advancing to the Member grade is shown by Junior Members eligible for that recognition of their competence. Only about one-fifth of the 1,000 Junior Members eligible for advancement in 1950 submitted applications. There is little actual difference between the Junior and Member grades and hence the incentive to apply for advancement is small. Because of this, because it would reduce the workload of the Section officers, and because it would be a financial saving to the Society, I recommend that the membership be given an opportunity to consider abolishing the Junior Member grade.

Even more urgent than that, however, is the need to provide the membership with facts relating to the cost and confusion involved in administering the Society's seven nonvoting classes of membership other than the Student grade: Affiliate, Class A and B; Associate, Class A and B; Corresponding; and Honorary, Class 1 and 2. As a start, I recommend that the membership be given an opportunity to consider a consolidation of the Affiliate, Associate, and Corresponding grades, with dues to be raised to an amount equal to the maximum dues paid by individuals in the Member grade.

The Council was pleased with the steady growth in members, and commended Mr. Hostetter and the office staff for good work in handling membership.

Membership Eligibility

At the Council meeting held in Washington, D. C. on December 13, 1950 the Council Committee on Membership was asked to define eligibility specifications, with examples of qualifying experience for the Associate Member and Affiliate Member grades. This committee consists of R. E. McArdle, chairman, and D. B. Demeritt and F. H. Kaufert.

With the help of R. D. Hostetter, assistant executive secretary, the committee has completed its assignment, and all Council members are in substantial agreement with the recommendations. Accordingly, the results will be incorporated in the Section Manual for the use of the Section membership committees and other Section officers.

This Council committee was asked also to consider certain recommendations in membership grades as proposed in 1950 by a special committee

of the Gulf States Section. In the absence of specific recommendations by the Council committee, no action was taken.

Rotation of Annual Meetings

One of the perennial problems before the Council is the planning of annual meetings. The Society has scheduled its meetings in conformity with a rotation system devised in 1940. Departures from the rotation system have been necessary because of the war, and in order to meet special conditions, such as the 50th anniversary meeting in Washington, D. C. last year, and the joint meeting with the Canadian Institute of Forestry scheduled for Montreal in November 1952.

Ordinarily, meetings have not been scheduled farther than one or two years ahead because no Council has wanted to take actions which would be binding on a succeeding Council. However, certain conditions now make it desirable that meetings be scheduled farther in advance. Because of the competition between large organizations for meeting rooms and hotel space in the most desirable convention cities, some organizations now schedule their meetings years in advance.

In order that the executive office of the Society may undertake orderly planning for advance meetings with the Sections and with the hotels involved, the Council was asked to set up rotation system through 1965. It is understood that such a system may be modified to meet special conditions, but unless changed by action of the Council the schedule would be considered as a definite basis for planning meeting sites.

On motion of Mr. Fontanna, seconded by Mr. Nelson, the Council adopted the following rotation system which is herewith published for the information of the membership.

1951—South. (Biloxi, Miss.)
1952—Northeast. (Montreal.)
1953—Rocky Mountain Region.
1954—Central Region.
1955—West Coast.
1956—South.
1957—Northeast.
1958—Rocky Mountain Region.
1959—Central Region.
1960—Washington, D. C.
1961—West Coast.
1962—South.
1963—Northeast.
1964—Rocky Mountain Region.
1965—Central Region.

THE COUNCIL OF THE SOCIETY OF AMERICAN FORESTERS at its midyear meeting held at Manitou Experimental Forest, Woodland Park, Colo., June 3-6. *L* to *R*, Henry Clepper, executive secretary; Stanley G. Fontanna, Mich.; Gordon D. Marckworth, Wash.; Frank H. Kaufert, Minn.; C. Otto Lindh, N. Mex.; DeWitt Nelson, Calif.; D. B. Demeritt, Maine; Earl Porter, Ala.; F. H. Brundage, Oreg.; C. S. Herr, vice president, N. H.; and Charles F. Evans, president, Ga. R. E. McArdle of Washington, D. C., was unavoidably absent.

Foresters' Field Manual

The following report from R. D. Forbes, editor of the *Foresters' Field Manual*, now under process of compilation, was read and accepted by the Council with thanks.

Since Lt. Col. James G. Osborne of the Forest Service, a member of the Editorial Committee, has been recalled to active military duty, the Council requested that his place be taken by Roy A. Chapman, Col. Osborne's associate in biometry in the Forest Service.

Material for the *Foresters' Field Manual* is being submitted by 19 subject-matter committees.

The editor has received completed manuscripts on aerial photography; communications; entomology and pathology; fire protection; materials, structures and facilities; mathematics, surveying and civil engineering.

With minor exceptions the manuscripts are complete on economics and finance; forest recreation; forest-wildlife management; and range management.

The editor has received for review and return to the committee chairmen at their request very substantial portions of the material on forest measurements; hydraulics and forest influences; logging; management; and silviculture.

Chairmen of the committees on physics and chemistry; soils and geology; and utilization report substantial progress.

In an effort to achieve uniform presentation, adapted to the needs of field men, the editor has reviewed portions of all but the three subjects last named, and has returned them to the chairmen concerned. As was to be expected, the effort to attain complete coverage has resulted in more material than we are likely to find space for, and the committee chairmen have been asked to indicate priorities. With their help the editor has begun his job of cutting the manuscripts to usable size. The Editorial Committee has volunteered to make a final review, and the results will be resubmitted to the chairmen for comment. In this way it is hoped to select a maximum of material for publication without undue emphasis on any particular subject.

R. D. FORBES, *Editor, Foresters' Field Manual.*

Study of Forestry Research

For many years the Society has been affiliated with, and has had an official representative to, the Division of Biology and Agriculture of the National Research Council. E. L. Demmon, director of the Southeastern Forest Experiment Station at Asheville, is our present representative.

At a regular meeting of the Division of Biology and Agriculture held on May 15, 1951, Mr. Demmon presented the following proposal for a joint study of research in forestry in America to be undertaken by the National Research Council and the Society. Discussion of the proposal was invited by Dr. Ralph E. Cleland, chairman of the Division. Several members spoke favorably of the project. Dr. Detlev W. Bronk, chairman of the National Research Council (he is president of Johns Hopkins University), was present as an observer, and personally endorsed the proposal. It was then unanimously approved by the Division.

Dr. Cleland suggested that the appropriate agency to represent the National Research Council in guiding such a project would be the Council's newly organized Committee on Use and Care of Natural Resources of which Dr. Paul B. Sears of Yale is chairman. At the request of Dr. Sears, Henry Clepper outlined the proposal to the committee at its meeting on May 29. Again it was unanimously approved with the understanding that, if the project could be satisfactorily implemented, a small Steering Committee representing the participating organizations would undertake the study.

Members of the Division of Biology and Agriculture, National Research Council:

In 1953 the McSweeney-McNary Forest Research Act of 1928 will have been in operation 25 years. During this period the amount and scope of research in forestry have grown enormously. Recent estimates by the U. S.

Forest Service indicate that in excess of $17,000,000 annually is being spent by federal, state, educational, and industrial agencies for all kinds of forest and wood-use research. A substantial part of this program is being carried by federal agencies under authority of the McSweeney-McNary Act, including considerable cooperative work with state and corporate bodies and individuals.

The 25th anniversary of this Act presents a suitable occasion to reexamine the whole structure of our forest and wood-use research program to determine whether or not past gains have been satisfactory, what the status of current projects may be, and what the future goals should be.

Bailey and Spoehr's book *The Role of Research in the Development of Forestry in North America* was published in 1929. This was the first full-scale nongovernmental study of research in forestry, and was financed by the General Education Board at the suggestion of the National Academy of Sciences. Another analytical review of forest research was made in 1938 by a committee on forestry of the Division of Biology and Agriculture. Dr. Raphael Zon, then director of the Lake States Forest Experiment Station, acted as chairman, but this report had only limited distribution.

It is proposed that the National Research Council, through its Division of Biology and Agriculture, and the Society of American Foresters jointly make a study of forest and wood-use research as suggested above. This project might follow the procedure used in a previous study made in 1947 by a joint committee on forestry of the National Research Council and the Society of American Foresters. The results were published by the Society under the title *Problems and Progress of Forestry in the United States*. The late Henry S. Graves, dean emeritus of the Yale School of Forestry, served as chairman of the joint committee.

The Division's new Committee on Use and Care of Natural Resources (Paul B. Sears, chairman) might be the appropriate body through which the National Research Council would function in this matter. Perhaps the most practical procedure would be to set up a small subcommittee, consisting partly of members of the larger committee and partly of other individuals from the forestry profession.

If the Division thinks well of this proposed project, Henry Clepper, executive secretary of the Society of American Foresters, will proceed with arrangements for its implementation through the S.A.F. Council (the Society's governing board). He will also explore the possibilities for financing the project by inviting the participation of the Charles Lathrop Pack Forestry Foundation, of whose advisory board he is a member.

The National Research Council can make a valuable contribution to the development of forestry technique in America by joining with the Society in this proposed reexamination of the role of research in forestry. I respectfully commend the project to the Division's consideration.

May 15, 1951 E. L. DEMMON.

On motion of Mr. Nelson, seconded by Mr. Fontanna, the Council voted unanimously to approve a cooperative study of research in forestry by the Society and the National Research Council, and authorized the executive secretary to explore means of financing the project.

Progress reports on this project will appear in the JOURNAL.

Society Finances

Miss L. A. Warren, business manager, prepared Table 1 which compares income and expense for the first six months of the fiscal years 1950 and 1951 (December 1-May 31), and shows the budget for the fiscal year 1951 (December 1, 1950-November 30, 1951). All figures given are from the auditor's reports.

The financial situation of the Society is sound, and no revision of the budget submitted at the annual meeting is recommended. No deficit is expected—in fact net earnings of $3,600, as estimated, should be realized. Expenditures for the six-month period are estimated at $45,289, less than half the amount ($92,713) estimated for the year. Approximately $70,116 (or over 70 percent of estimated income) had been collected by May 31.

Publications

In 1949 the Council authorized the allocation of $11,000 from the General (Invested) Fund of the Society as follows: $6,000 for the compilation of the Foresters' Field Manual to be replaced by royalties; and not to exceed $5,000 for publication of *Fifty Years of Forestry in the U. S.*

The cost of compiling and publishing the *History* was $4,282. To date 752 copies have been sold for $3,008. It is likely that the cost of this publication will be recovered in 1951. Accordingly, it is recommended that a savings account be opened and the amount of sales, not exceeding $4,760, be deposited therein. It is further recommended that when a deposit of $4,760 is reached bonds be purchased for replacement in the General (Invested) Fund of the Society.

To date the Foresters' Field Manual has cost $3,253. When it is published and income from sales is realized, it is recommended that deposits in the savings account be made (similar to above recommendation for *Fifty Years of Forestry*).

These recommendations are in line with approved Council policy to finance special projects from General (Invested) Society funds and not from current income.

On motion of Mr. Nelson, seconded by Mr. Demeritt, the Council unanimously approved the above recomdations by Miss Warren, with appreciation for good stewardship by her and the business staff.

JOURNAL OF FORESTRY

At the meeting of the Division of Public Relations held in Washington, D. C. on December 15, 1950 a resolution was adopted recommending to the Council that an associate editor of public relations be appointed to the editorial board of the JOURNAL OF FORESTRY. (See the JOURNAL for February 1951, page 141.) On motion of Mr. Nelson, seconded by Mr. Herr, the Council unanimously went on record that there is no need for an associate editor for public relations.

Articles having to do with public information and education have appeared from time to time in the JOURNAL. Papers on this subject are always welcome both from members and nonmembers. Their acceptance is subject to the same considerations given all papers submitted for publication—readability, interest, timeliness, and correct writing.

TABLE 1.—INCOME AND EXPENSE FOR COMPARATIVE SIX-MONTH PERIODS (1950-1951)

	Expenditures to May 31, 1950	Expenditures to May 31, 1951	Annual budget 1951
Journal of Forestry	$14,803.90	$15,082.52	$27,300.00
Salary of Editor	2,250.00	1,950.00	4,000.00
Editor's Expense	57.49		250.00
Advertising Commission and Retainer	1,901.45	2,243.00	5,000.00
Advertising Promotion	624.98	360.27	1,300.00
Committee Expense	40.13	54.47	100.00
Grading Forestry Schools	181.91	42.88	300.00
Division Expense	7.70	17.67	50.00
Referenda and Election of Officers	361.70		500.00
Section Manual	402.74	42.95	
Constitution and Bylaws	537.00		
General Expense	512.72	347.10	850.00
Salaries of Executive Secretary and Assistant	6,300.00	6,900.00	13,800.00
Salaries of Office	11,230.00	11,842.50	24,500.00
Postage	866.25	1,102.28	1,600.00
Telephone and Telegram	234.58	228.98	520.00
Rent	1,005.00	1,185.00	3,245.00
Multigraphing and Mimeographing	155.86	193.01	500.00
Miscellaneous Printing	869.30	506.65	1,500.00
Office Supplies	491.30	635.53	1,000.00
Depreciation	194.35	164.33	500.00
Travel, Officers	1,177.54	1,027.42	3,000.00
Pension Premiums	1,005.65	747.14	773.00
Natural Resources Council	200.00	200.00	200.00
American Institute of Biological Sciences	50.00	50.00	50.00
Council Travel			1,250.00
Social Security		133.82	600.00
Miscellaneous			25.00
Annual Meeting (1950)		232.06	
	$45,461.55	$45,289.58	$92,713.00
Income			
Dues	$53,853.42	$55,995.51	$70,500.00
Fees	1,871.25	1,850.00	5,500.00
Subscription and Sale of Journals	7,027.55	6,699.49	7,700.00
Advertising	4,085.49	4,509.32	10,000.00
Interest and Dividends	278.14	272.51	400.00
Miscellaneous Income	592.43	441.83	750.00
Forestry Terminology		347.45	1,500.00
	$67,708.28	$70,116.11	$96,350.00

A written report on accomplishments in obtaining advertising and prospects for the future was presented to the Council by Lloyd Thorpe, JOURNAL advertising representative in Seattle, and was supplemented by information by Prof. Marckworth. On motion of Mr. Nelson, seconded by Dr. Kaufert, the Council voted unanimously to commend Mr. Thorpe for his efforts and the good job he has done, and to continue his services.

Full-time Editor

Mr. Nelson reminded the Council of the long-continued discussion of the need for a full-time paid editor. A previous Council (in June 1948) had "considered the need for a paid editor who would devote full time to the Society's publications, including not only the JOURNAL, but also *Forestry News*, bulletins and books, the annual proceedings, a biennial directory of members, and other publications as may be authorized by the Council." (See JOURNAL for August 1948, page 627.)

At that time the Council took action, subsequently reaffirmed by the Council in June 1949, that the Society should establish a staff office on publications. (See JOURNAL for August 1949, page 677.) This action was as follows:

> The Council approves the establishment of a staff office on publications with qualified personnel, as the next major expansion of the annual budget. It should be the function of this office to conduct the editorial work and business management of the JOURNAL OF FORESTRY and *Forestry News*; and to handle the publication and distribution of such other publications as the Society may undertake from time to time.
>
> Pending the establishment of this office, the Council requests the editorial board and officers of the JOURNAL OF FORESTRY to put into effect such improvements in the JOURNAL and increased advertising as they find practicable within the present budget.

On motion of Mr. Nelson, seconded by Mr. Fontanna, the Council unanimously again went on record to employ a full-time editor at the earliest practicable date, and directed the executive secretary to present to the Council at its December 1951 meeting a list of possible candidates and the budget needed to carry out this proposal in 1952.

In taking this action, the Council conceives of a staff office on publications headed by a full-time editor, performing not only editorial functions, but also undertaking revenue-producing activities through increased advertising and other means. The possibility of recovering the expense of a full-time editor through increased revenue, which he himself would be expected to help produce, has never been tried because of lack of funds to underwrite the initial salary and other costs. This is the possibility which the Council is now looking into.

Policies and Objectives

At the Council meeting held June 19-21, 1950, the members reviewed the assignment given the Committee on Policies and Objectives (F. H. Brundage, chairman) which was charged with the responsibility of recommending the weeding out of obsolete policy statements and of proposing others in order to develop a comprehensive and up to date policy under which the Society can function.

Mr. Brundage submitted a report with recommendations to the Council at its meeting on December 13, 1950. This report was substantially the same as the one published in the JOURNAL for February 1951, page 135.

At the recent Council meeting, Mr. Brundage explained that the Committee on Policies and Objectives reviewed a total of 86 policy items adopted by one means or another during the history of the Society.

The committee found 48 items which should be discarded because they are completely out of date; 7 items which are still current but in need of revision or restatement; 6 items which are not now adequately covered by policy statement and for which policies should be established; and 25 items which are reasonably current and do not require change.

On motion of Mr. Herr, seconded by Mr. Nelson, the Council unanimously declared discarded a group of policy items which were defined as being completely out of date. These items include 3 adopted years ago by action of Society committees, 22 adopted by action of the Council, 18 adopted by resolutions at annual meetings, and 5 adopted by referendum of the membership.

The 5 policies adopted by referendum which hereafter will not be considered as being in force because of obsolescence were concerned with conditions of professional employment in the Civilian Conservation Corps (1936); the McNary bill of 1923; a proposed plan for a national forest policy (1920); Society meetings, Sections, committees, and related business (1915); and the relation of forests and water (1914) superseded by the referendum on multiple use.

The committee was asked to designate those policy statements that require revision in part, and to suggest the means by which new broader policies may be presented for Council consideration. Mr. Brundage believes that the subject Divisions are the appropriate bodies to draft such statements for Council consideration, and later will be requested to do so.

World Forestry Congress

In its annual report presented to the Society last December 13, the Committee on International Relations (Tom Gill, chairman) recommended to the Council that it be empowered to explore the possibilities of holding the fourth World Forestry Congress in the United States. For complete discussion of this proposal members are referred to the committee's report, published in the JOURNAL for February 1951, pages 131-132.

On motion of Dr. Kaufert, seconded by Prof. Marckworth, the Council unanimously requested the Committee on International Relations to act for the Society in ascertaining the possibilities for holding the fourth World Forestry Congress in the United States.

Neither the year nor the place for the Congress has been decided, but the West Coast has been prominently mentioned as a suitable region and the year 1954. Should the Congress be held in North America, Canada would be invited to serve as co-host with the United States.

Committee on Safety

Seth Jackson, in charge of the safety program for the U. S. Forest Service, Washington, D. C., submitted the following proposal to President Evans last February:

> I suggest to the Council that either the Society's policy statement, division structure, perhaps both, include the subject of accident prevention.
>
> One might argue that this is not forestry. Directly, probably not, but indirectly, it has a far reaching effect. Let me illustrate this by one example. The Forest Service started an intensive accident prevention drive in 1946, when it had nearly 900 lost-time injuries. Last year, this toll was cut to about 500, with approximately the same number of employees on the payroll. Last year only two were killed in line of duty. We have had one full year with no deaths, although we have already had one in 1951, compared with a yearly average of about 10 previous to 1946.
>
> The reduction of accidents mentioned above leaves about 400 additional employees nowadays who are working full time on Forest Service jobs. Under our old way of doing things, these men probably would have been injured and laid up for an average of about 20 days each annually, to say nothing of those who were wiped out completely. Safety experts tell us that the indirect costs of accidents are about four times the more direct ones cited above—costs due to decreased production, making investigations and reports, training replacements, repairing damage to equipment, etc. This, of course, is insignificant compared with the suffering that results to the victims and their dependents.
>
> Logging and lumbering injury rates are among the highest in industry. National Safety Council statistics for 1949 show the lumber industry highest among 41 industries, with a frequency rate of 47.72 per million

man-hours worked. Its severity rate was next to the highest, 4.67 per thousand man-hours worked. Average days lost per case was 98. The Bureau of Labor Statistics of the U. S. Department of Labor shows for the third quarter of 1950 an even more depressing picture; a saw milling injury frequency rate of 65.7; and a logging rate of 95.8. The reason for the difference is that the National Safety Council includes mainly the larger companies, some of which are practicing accident prevention. BLS covers smaller outfits as well, which are notoriously dangerous places to work. I am confident that if the Society would take a positive stand on this issue, the long range result would be fewer of our woods and forestry workers hurt or killed, and many more man-hours expended on properly husbanding our forest resources.

If the Council is interested, I would welcome the chance to serve on a committee to formulate a practical policy for the Society to adopt; and later to help work out the details of putting it into effect. A few suggested approaches are to include accident prevention as a function of the Division of Education; to work with National Safety Council Committees in developing safety materials for forest industries; cooperation with the American Society of Safety Engineers' Committee on Education which is introducing accident prevention into college courses. Accident prevention would well be integrated in forest school curricula. We might even form an entirely new subject matter committee to be called Safety and Training. Safety and efficiency on the job are usually one and the same, and are achieved largely through training. With the national situation as it is, we in forestry can help by making our work as efficient and accident-free as possible.

On motion of Mr. Porter, seconded by Mr. Demeritt, the Council unanimously authorized the president to appoint a Committee on Safety. Mr. Jackson has been asked to serve as chairman of this committee; the other members will be announced later.

Committee on History of Forestry

The Committee on the History of Forestry (Robert K. Winters, chairman) which compiled the book *Fifty Years of Forestry in the U.S.A.*, published by the Society in connection with the golden anniversary last year, asked to be discharged because it had completed its assignment.

However, numerous members have recommended that a Committee on the History of Forestry be maintained to give encouragement and guidance to historical writing. Accordingly, on motion of Mr. Porter, seconded by Mr. Herr, the Council unanimously approved the continuation of this committee.

Roland Rotty, U. S. Forest Service, Washington, D. C., has accepted the chairmanship. The other members will be announced later.

Committee on Manpower

On the recommendation of John Shanklin, director of forestry for the U. S. Department of the Interior, Washington, D. C., the Council took under advisement the formation of a Committee on Manpower, with functions similar to those performed by this committee (S. T. Dana, chairman) during World War II.

On motion of Mr. Demeritt, seconded by Mr. Herr, the Council unanimously authorized the president to appoint a Committee on Manpower with the following explanation of its functions and duties.

The formation of a Manpower Committee in the present emergency continues an activity of the Society which proved so worthwhile during World War II. The purpose of the committee is to develop the critical importance of key foresters in fire and insect control programs, production and procurement of forest products. Public and private agencies must have sufficient time to train men to replace these foresters leaving for the Armed Forces. The importance of these key foresters in essential civilian services must be brought to the attention of the Selective Service and labor agencies and this committee will develop these contacts and coordinate its activities with other professional societies and agencies.

The personnel of the committee will be announced later.

Resolutions Passed

On motion of Mr. Lindh, seconded by Mr. Nelson, the Council unanimously passed the following resolution:

Multiple Use

Whereas the Society of American Foresters is on record as subscribing to the multiple use of forest and other wild lands by referendum ballot held December 13, 1947, and since certain western livestock interests are considering a legislative proposal which would nullify multiple use for the benefit of all the people, on federal forest and wild lands, the Council hereby authorizes and requests the President of the Society

Actively to resist any legislative proposals which would adversely affect multiple use principles, and

Actively to support any legislative proposals which would strengthen multiple use principles, by

Notifying the concerned congressional committees at the appropriate time, and

Notifying the Secretaries of Agriculture and the Interior.

On motion of Mr. Lindh, seconded by Mr. Demeritt, the Council unanimously passed the following resolution:

Mining Claims

Whereas, the Society of American Foresters has subscribed to the principles of multiple use in the management of forest and other wild lands, and

Whereas, this principle is defined as meaning that a conscious effort will be made to manage each unit of land for its highest sustained productivity, or the utilization of an identical area for several purposes at the same time, and

Whereas, it is proved that the general mining laws of the United States applicable to public lands are unilateral in effect and often harmful to, or in direct conflict with, proper multiple land use, and

Whereas, the location of many thousands of mining claims over the western national forests and other federal forest lands is encumbering millions of acres of valuable timber lands, thus interfering with and often defeating good forest management and production; is blocking timber access routes, thus hampering and delaying timber harvests vital to building programs and the Defense effort; and is often interfering with recreational use by overlapping locations or strip mining which usually destroys associated natural resources and scenic attractions with little or no regard to basic land values and restoration needs.

Now, therefore, it is resolved by the Council of the Society of American Foresters, that the Society through its President shall advise the Congress of the United States of the forest and wild land problems created by the uncontrolled location of mineral claims on the federally owned public lands, and respectfully petition the Congress to enact a revision of the mining laws that will provide for (1) separation of mineral and surface rights in mining locations, retention of surface rights, including timber and all other surface resources by the public, and other appropriate action; or (2) place all mineral disposal, at least on national forest and other forested land, under the provisions of a leasing act similar in principle to the Mineral Leasing Act of February 25, 1920.

Election of Officers

The following letter, dated May 18, 1951, was sent to President Evans by H. H. Chapman:

I have previously called to your attention the anomalous situation regarding election of officers (and Council) of the Society which hinges on:

1. The provision in Article VIII that the minimum number of nominees for President shall be two (Sec. 1) and in Sec. 3 the provision that the runner-up for President shall be declared elected as Vice President.

2. The absolute and persistent refusal of the Committee on Nominations to nominate anyone unless *less* than *two* candidates are nominated for President, in which case they will supply the deficiency. (The same holds for the 9 Council members. This in spite of correspondence with you and with the Chairman of the Committee. See JOURNAL for May for Committee pronouncement.)

Of course, it is just fine if enough petitions come in to supply more than the minimum number. But as you know this did not happen in 1949, hence the only "election" was the choice of the voters as to which "of him and me" should be President and which Vice President. I don't call that an election. It is merely tweedledum or tweedledee with the signers of the two petitions deciding who the two officers shall be, not the voters. I thought you agreed with me on this.

Since it is evident that there is no hope in the present Constitution or in the intentions of the nominating committee and this situation has gone on long enough, the only solutions are:

1. A constitutional change providing for a minimum of twice the number of candidates required to fill the 11-man Council including officers, or

2. A by-law forcing the nominating committee to supply candidates to equal this proposed minimum, in the absence of petitions in sufficient number to do so.

If only 9 are nominated by petition for the Council, then all 9 are elected before the ballots are cast. Hence, why hold an election at all?

I don't see any need of submitting this letter for publication if the Council will take action at the June meeting to remedy this ridiculous situation, but if it is going to be let ride. I favor airing it in print.

H. H. CHAPMAN.

To this letter Mr. Evans replied to Prof. Chapman on May 23:

Your letter of May 18 is more heated than the facts justify.

The Council agrees entirely with your objective but not with your proposal for attaining it. The matter was discussed at the Council meeting in June 1950 and it was decided to get the desired competition by arousing interest rather than by placing the responsibility on a committee. There has been no "absolute and persistent refusal," as you charge, on the part of the Committee to assume this responsibility. There is no satisfactory means of preventing the kind of situation that occurred in 1949, which I have regretted as much as you have, except the active and intelligent interest of our members.

A nominating committee, appointed by the President could conceivably control the election at least to the extent of killing off a nominee put up by petition.

I feel sure we shall have active competition this year. Two good men already have been nominated by petition. Does not your Section have someone who would be qualified? There are many good men north of the Potomac and you know all of them.

C. F. EVANS,
President.

For the record, Mr. Clepper sent the following information and com-

ment to Mr. Evans:

Below I list the number of candidates for the office of President and for the Council during the past seven biennial elections.

Year	Number of candidates For President	For Council
1949	2	21
1947	3	17
1945	6	21
1943	4	30
1941	9	33
1939	4	26
1937	5	26

Until eight years ago the Society used an election system whereby the Council established voting districts, based on the number of members in each district. It was a cumbersome procedure, and there were always complaints because of the manner in which states had to be assigned to voting districts to meet the arbitrary requirements of the system. It became evident that we did not need voting districts to obtain either regional or minority-group representation on the Council and they were abolished by Constitutional amendment in 1944.

The election of 1943 was the last year we used voting districts. Thereafter the Constitution was changed to require at least two candidates for President and at least 9 candidates for the Council (the exact number of offices to be filled). The point to be remembered is that the Nominating Committee was no longer required to provide more candidates than the number of offices to be filled.

I myself had made this recommendation to the Council because of a conviction that, if the elections were properly publicized, at least as many and probably more than the minimum number of nominations would be forthcoming by petition. This conviction has been borne out by each of the three elections since the Constitutional change was made (1945, 1947, and 1949). My observations of the past seven elections have convinced me that nominations by petition are the most democratic way to get candidates for office in a Society such as ours.

Having had considerable experience working with Nominating Committees since 1937, I know the trouble they have had trying to get Presidential candidates both under the old voting-district system and under the present system. Five Members and Fellows have already declined to stand for President for this coming election (not including yourself who announced a year ago that you would not be a candidate for reelection).

Prof. Chapman's criticism of our present election system seems to hinge on the election of 1949 where there were only two candidates for President. He can scarcely find fault with the number of candidates for the Council in 1949 since there were then 21.

He proposes a Constitutional amendment that would provide a minimum of twice the number of candidates "to fill the 11-man Council including officers." That would mean a minimum of 4 candidates for President and 18 for the Council. He also recommends "a bylaw forcing the Nominating Committee to supply candidates to equal this proposed minimum, in the absence of petitions in sufficient number to do so."

Two objections to these proposals are worth your consideration:

1. Following every election there are complaints by some members because in their opinion the candidates were not representative or insufficient in number or otherwise unsuitable. The best possible answer to such criticism is to point out that every member has the privilege of initiating a nomination, and if he has not taken the trouble to do so he has no grievance.

2. If a Nominating Committee is forced to make a certain number of nominations, over and above the minimum number of offices to be filled, how will the Nominating Committee in turn force reluctant candidates to run for office? In short, if a member refuses to be a candidate at the solicitation of ten voting members who are frequently his close friends and associates, how will a Nominating Committee induce him to do what he would not at the request of his friends?

Beginning with the March number of the JOURNAL, each issue until the nominations close on October 8 will contain a notice of the election and a call for nominations. In addition, on June 1 the chairman of the Nominating Committee (A. Z. Nelson) will send a special letter to all Section and Chapter officers asking them to stimulate nominations (at least one from each Section) for the Council, and one from each region, if not from each Section, for president. A second letter will go out early in September if necessary.

HENRY CLEPPER,
Executive Secretary.

Following further consideration of Prof. Chapman's proposal, the Council declined to take action to require the Nominating Committee to name twice as many candidates as there are offices to be filled.

The Council refused, not because it didn't want to see twice as many candidates, or even more, than there are offices to be filled. But, rather it refused, because of belief in the democratic prineiple that the members themselves should nominate the candidates they want to represent them on the Council, and not leave it up to a small committee to handpick the candidates. Moreover, as pointed out by Mr. Evans in his letter to Prof. Chapman, "a nominating committee, appointed by the president, could conceivably control the election at least to the extent of killing off a nominee put up by petition."

Miscellaneous

The Council designated Henry Clepper as the Society's representative to work with W. A. E. Pepler of the Canadian Institute of Forestry who has been named as general chairman of the joint meeting of the Society and the Institute to be held in Montreal, November 17-20, 1952.

On motion of Mr. Fontanna, seconded by Mr. Herr, the Council unanimously elected Lem C. Hastings of Redding, Calif., an Affiliate Member, to the grade of Junior Member.

Certain proposed amendments to the Constitution and Bylaws were discussed by the Council, and tentatively approved. These recommended changes will be published in an early issue of the JOURNAL for the information and comment of the Society membership.

The Council expressed appreciation to the U. S. Forest Service and various personnel of Region 2 and to the Central Rocky Mountain Forest and Range Experiment Station for providing facilities and other courtesies which made this meeting possible.

Dunn Named to Accrediting Committee

Paul M. Dunn, dean of the school of forestry at Oregon State College, Corvallis, has been appointed to serve on the Society's Committee on Accrediting.

Myron Krueger is chairman of the committee. Other members are Paul A. Herbert, Walter H. Meyer, and Richard J. Preston.

FAO Makes 68 Project Agreements

Society delegates to a meeting on May 10 of the National Conference of Nongovernmental Organizations on FAO learned that 68 project agreements have been concluded between the Food and Agriculture Organization of the United Nations and 32 governments. Representing the Society at the meeting were Robert D. Hostetter, M. C. Miskovsky, and E. I. Kotok.

These agreements call for 226 experts and 159 fellowships. Seven projects have been completed and field work has been started on 61 others. In the seven months that funds for the Expanded Technical Assistance Program have been available, FAO has committed for the first year 72 percent of the $4,875,000 it has been allotted in 36 currencies.

Over half of the experts required already have been recruited, from 28 different countries. Over one-third are from the U. S.

Other FAO subjects discussed were long-time trends, budgetary problems, commodity activities, land tenure, foreign aid, and FAO's information program.

NCNO's constitution was revised to provide for one delegate from each group of organizations having similar interests to serve a staggered, rotational term on the steering committee.

Southern Californians See Weyerhaeuser Films

Two movies produced by the Weyerhaeuser Sales Company were viewed by members of the Southern California Section at its final meeting of the 1950-1951 season. The meeting was at Carpenters' Cafe, Arcadia, Calif. on May 25, 1951.

Chosen to direct the activities of the Section for the next year was Everett L. Hamilton, U. S. Forest Service, Glendora, Calif. The new vice chairman, who also serves as membership chairman, is Gustav Juren, 1430 Moroda Place, Altedena, Calif. Samuel F. Gossard, Henninger Flats Nursery, Pine Crest Drive, Altedena, Calif., was elected secretary-treasurer.

Retiring chairman Bernard H. Paul was unanimously elected chairman of the Section's policy committee, and Robert J. Ball was chosen to head the program committee.

President and Council Nomination Deadline Near

Although October 8, 1951 is the deadline for submitting petitions to nominate candidates for the office of president and for members of the Council, Alf Z. Nelson, chairman of the election committee recommends earlier submission of petitions. Photographs of candidates nominated during August can be published in the JOURNAL in advance of balloting, he says, while similar presentations may not be possible in the case of candidates who enter the race at a later date.

Any ten voting members may sign a petition such as the following to nominate a Member or Fellow for consideration:

We, the ten or more undersigned voting members of the Society of American Foresters, hereby nominate ———— to serve as (member of the Council) (president) during 1952 and 1953.

The two elections are conducted under the Hare system of proportional representation. The first presidential candidate to receive one more than half of the valid votes cast is elected president. The presidential candidate having the most votes after a transfer of surplus ballots of the winning candidate and losing candidates is elected vice president. In the election of Council members, the first nine candidates to receive one more than a tenth of the valid votes cast are elected.

As the August JOURNAL went to press the following candidates had been nominated:

For President

Stanley G. Fontanna, School of Natural Resources, University of Michigan, Ann Arbor, Mich. (Central States Section.)

DeWitt Nelson, Division of Forestry, Department of Natural Resources, Sacramento 14, Calif. (Northern California Section.)

For the Council

Dwight B. Demeritt, Dead River Company, 6 State Street, Bangor, Me. (New England Section.)

Walter H. Horning, Division of Forestry, Bureau of Land Management, U. S. Department of the Interior, Washington, D. C. (Washington Section.)

Gordon D. Marckworth, College of Forestry, University of Washington, Seattle, Wash. (Puget Sound Section.)

C. Otto Lindh, U. S. Forest Service, Post Office Building, Albuquerque, New Mex. (Southwestern Section.)

George R. Phillips, Office of the Secretary, U. S. Department of Agriculture, Washington 25, D. C. (Washington Section.)

Earl Porter, Southern Kraft Division, International Paper Company, Mobile 9, Ala. (Gulf States Section.)

Perry A. Thompson, 12 Elkin Court, San Rafael, Calif. (Northern California Section.)

R. H. Westveld, Department of Forestry, University of Missouri, Columbia, Mo. (Ozark Section.)

Robert K. Winters, Central States Forest Experiment Station, Old Federal Building, Columbus 15, Ohio. (Central States Section.)

Fellow Candidates Nominated by Petition

Candidates nominated during the past month for election to the grade of Fellow are:

Walter J. Damtoft, Washington, D. C.

Arthur W. Sampson, Berkeley, California.

Election to the grade of Fellow is the highest membership distinction that the Society can bestow upon a member. To nominate a candidate for that honor, a petition in the following form should be submitted:

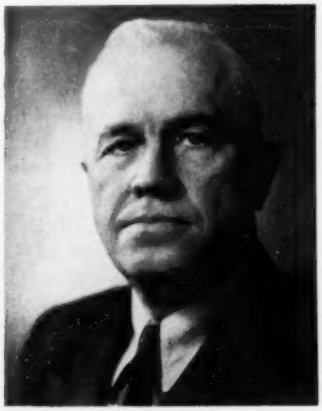
We, the 25 or more undersigned Members and Fellows of the Society of American Foresters, hereby nominate ———— to be considered for election to the grade of Fellow in 1952.

October 8, 1951 is the deadline for

Council Candidates

C. OTTO LINDH

C. Otto Lindh, who has been nominated for another term on the Council is the regional forester of the Southwestern Region, Forest Service, U. S. Department of Agriculture, Albuquerque, N. Mex.



WALTER H. HORNING

Walter H. Horning is a candidate for a post on the Council. He is the chief of the Division of Forestry, Bureau of Land Management, U. S. Department of the Interior, Washington 25, D. C.

R. H. WESTVELD

R. H. Westveld, who has been nominated for election to the Council on December 1, 1951, is the chairman of the Department of Forestry, University of Missouri, Columbia.

submitting petitions to the Society office. A 200 word factual biographical statement should accompany each petition.

Candidates previously nominated are:

Hugh Curran, Caracas, Venezula.
Elwood L. Demmon, Asheville, N. C.
Emanual Fritz, Berkeley Calif.
George M. Hunt, Madison, Wis.
Myron E. Krueger, Berkeley, Calif.
Woodbridge Metcalf, Berkeley, Calif.
DeWitt Nelson, Sacramento, Calif.
Harold S. Newins, Gainesville, Fla.
Jay H. Price, Milwaukee, Wis.

See the June JOURNAL for a list of current Fellows.

Southeastern Section Tops Columbia River

Culminating a two-year drive, the Southeastern Section on May 31, 1951 surged ahead of the Columbia River Section in total membership.

Netting an increase of 186 in total membership from June 1, 1950 to May 31, 1951, the Southeastern Section achieved a total of 717 members. That is more members than there were in the entire Society as recently as 1921. The Columbia River Section, now in second place, has 682 members, and the Northern California Section is a strong third with 652 members.

Other Sections in addition to the Southeastern with a net gain of more than 100 during the last year are: Central States, Northern California, and Columbia River.

The total membership of the Society on May 31, 1951, mid-point in the fiscal year, was 8,029. That represents an increase of 1,315 since June 1, 1950. Expressed as a ratio, the increase was 19.3 percent of the 6,714 members on June 1, 1950. The Society was in existence 27 years before its total membership had been built to a figure that equalled the *increase* during the past year.

A large part of the gain was due to a net increase in Junior Members of 500 plus an additional 165 who were transferred to the Member grade. Of the 613 new Student Members, about three-fourths graduated in June 1951 and will be advanced to the Junior Member grade on September 1.

The accompanying Table 1. gives the relative standings of the Sections and tabulates membership by grades.

Armed Forces Offer Few Jobs for Foresters

Foresters entering the armed forces find little opportunity to fully utilize their professional training, according to Major General Wm. E. Bergin, acting Adjutant General, Department of the Army. In responding to an inquiry by Robert D. Hostetter, S.A.F. assistant executive secretary, Major General Bergin stated, "Of the armed forces, the Army offers the best potential source for utilization of persons with a forestry background. Application for technical assignment may be made to the Corps of Engineers." Civilians should file a Form 57 with the Office of the Chief of Engineers, Civilian Personnel Division, Room 1414, Building T-7, Washington 25, D. C., or with the appropriate District Engineer when recruitment is on the District level. Foresters in service who wish to transfer from one branch to another should apply in accordance with regulations. Transfers are approved only if for the good of the service.

According to Major General Bergin, "the Chief of Engineers will be interested in receiving applications from persons having experience in design, construction, and construction inspection of buildings, structures, utilities and related facilities . . . or who have education and practical experience in any type of civil engineering or photo interpretation."

"There are no forestry units in active military service at the present time, so the use of professional foresters in the military service must be based upon the needs of the service," continued the General. The 1685th Engineer Forestry Company (O. R. C.) was activated a few months ago at Paul Smith's College, Paul Smiths, N. Y., to train students. A job description for officer personnel is contained in Technical Manual 12-406, 8 February 1946, which is quoted herewith:

TABLE 1.—S.A.F. MEMBERSHIP BY SECTIONS, MAY 31, 1951

Section	Rank	Total	Increase since 5-31-50	Junior	Member	Fellow	Student	Affiliate	Associate
1. Allegheny	6	514	69	236	217	3	36	8	14
2. Appalachian	5	529	64	264	232	2	16	11	4
3. Central Rocky Mountain	14	244	2	82	141	0	14	6	1
4. Central States	4	579	180	283	164	2	111	7	12
5. Columbia River	2	682	109	310	277	5	59	18	13
6. Gulf States	7	500	90	231	209	2	18	26	14
7. Inland Empire	18	177	34	79	69	1	22	3	3
8. Intermountain	17	191	17	71	105	0	15	0	0
9. Kentucky-Tennessee	19	168	7	66	93	0	0	3	6
10. New England	8	499	58	181	239	5	28	27	19
11. New York	9	400	48	162	183	3	35	9	8
12. Northern California	3	652	121	240	291	4	63	32	22
13. Northern Rocky Mountain	16	192	32	86	85	1	18	0	2
14. Ozark	13	256	50	115	105	1	13	18	4
15. Puget Sound	10	389	66	153	171	2	41	14	8
16. Southeastern	1	717	186	387	204	3	83	22	18
17. Southern California	21	83	4	37	36	2	0	6	2
18. Southwestern	20	166	6	80	82	0	0	1	3
19. Upper Mississippi Valley	11	334	69	135	132	2	41	14	10
20. Washington, D. C.	15	230	17	33	152	14	0	0	31
21. Wisconsin-Upper Michigan	12	313	43	147	146	0	0	8	12
No Section Affiliation[1]		147	36	63	80	3	0	1	0
Corresponding Members		55	4						
Honorary Members		12	0						
Total membership		8,029	1,315	3,441	3,413	55	613	234	206

[1]Includes members in U. S. and foreign countries who have requested that they not be designated as members of any Section.

Forestry Officer (4942)

"Directs or supervises logging and milling operations for manufacture and supply of lumber. Locates timber tracts from maps and directs establishing of operating sites; estimates quantities of useable timber in tract, and man-days required for completion of logging operations; supervises measuring and marking of trees to be cut for bridges, roads, buildings, and field fortifications; supervises felling and cutting of trees, loading and hauling of logs to sawmill; establishes procedures pertaining to cutting and milling of logs; determines lumber content in board feet measure of sawlogs prior to manufacture; supervises operation of portable sawmill machinery and equipment. May acquire and operate lumber mills and facilities in a theater of operations. May conduct studies relative to forestry problems.

"Must be able to operate stationary, semi-portable, and skid-mounted portable sawmills. Must be familiar with cruising and log scaling, and should be able to differentiate between species and relative grades of lumber best suited for military use.

"Military experience desirable.

"Civilian experience in logging, sawmill operations, or cruising essential."

Special Regulations No. 615-25-15, published by the Department of the Army on 15 November 1950 contains job descriptions for enlisted personnel as follows:

Title	Military Occupational Specialty Code
Logging Foreman	1466
Lumberjack	4466
Sawmill Crewman	4459

A forester entering the service as an enlisted individual may be initially assigned to the Corps of Engineers for training. If an enlisted forester meets the basic criteria for Officer Candidate School he may apply for officer training and list Corps of Engineers as his choice of branch for assignment upon graduation. In neither case, however, can definite assurance be given "that such individual would actually receive such assignment."

Foresters may apply for commissions as engineers in the Officers Reserve Corps under the provisions of Special Regulations No. 140-105-8, dated 12 October 1950. "If an applicant fails to qualify," says Major General Bergin, "his experience as a forester would be most welcome in the Combat Arms. In the Infantry, for example, there is a definite need for persons with a forestry background."

The Navy, Marine Corps, and Coast Guard have no current military requirement for foresters, and none is contemplated in the forseeable future. In the Air Force, Air Force Specialty 92111, Rescue and Survival Technician, offers a possible secondary conversion of forestry skills to an active classification. Such a technician presents briefings, lectures, and demonstrations on survival techniques and procedures and participates in rescue and survival operations. Experience required includes existing under adverse climatic and terrain conditions, improvising equipment and facilities, and evaluating and solving problems under field conditions.

Kentucky-Tennessee Section Presents Forestry Journalism Award

Harry Nadler, above left, is shown presenting the Kentucky-Tennessee Section's first annual forestry journalism award to Mack Sisk, publisher of the *Dawson Springs Progress*, Dawson Springs, Ky. Mr. Nadler, who is vice chairman of the Kentucky-Tennessee Section, made the presentation at the annual meeting of the Kentucky Press Association on June 16, 1951 at DuPont Lodge, Cumberland Falls State Park, Ky. Niles Dillingham is the editor of the weekly newspaper which won the award. Mr. Dillingham used editorials, forestry advertisements, cartoons, and news items to impress his paper's readers with the benefits of good forestry. His outstanding work in that connection was the basis for the award. Points considered were: (1) Accuracy of the material and basis of its origin. (2) Frequency of articles or editorials. (3) Initiative shown by the editorial staff. (4) Originality of material, and (5) Public appeal the material had to subscribers.

To be eligible for the Section's contests in either Kentucky or Tennessee, newspapers must be non-dailys, must be members of the respective state press associations, and must submit pertinent published material.

K-T Section Meets at Mammoth Cave Park

Over 50 members and guests of the Kentucky-Tennessee Section met on May 31, June 1-2 at Mammoth Cave National Park, Mammoth Cave, Ky. Principal feature of the meeting was a field trip to points of interest to foresters within the boundaries of the 51,000-acre park. These included a tract of virgin timber; areas cut over before park was established and since grown up; plantations; fire protection equipment; soil erosion control work involving bulldozer usage, fertilization, seeding to lespedeza and barley, and mulching; present and proposed administrative and camping facilities; and a park-operated ferry across the Green River.

Park Superintendent Thomas C. Miller, in welcoming the group, discussed the origin and objectives of the

National Park Service and pointed out that Mammoth Cave, which has 150 miles of explored caverns, annually attracts 300,000 visitors, in 95,000 cars, who each spend $8 per day while seeing the park.

Chief Park Ranger George Fry planned and conducted the field trip.

Harrod B. Newland served as toastmaster at the fried chicken banquet on Friday evening at which Robert D. Hostetter, assistant executive secretary, spoke briefly concerning Society activities. The group then viewed two movies at the outdoor amphitheatre.

At the Saturday morning business meeting, James Buchholz reported that the *Dawson Springs Progress* was to receive the Section's forestry journalism plaque on June 16. The award is for the most outstanding reporting of forestry events during the year by a non-daily Kentucky newspaper.

After a discussion of the subject, the Section decided to continue holding two meetings each year and to encourage the formation of Chapters.

The present chairman, Maxwell MacMaster, will be the Section's delegate to the Biloxi meeting of the Society on December 12-15, 1951, and the secretary-treasurer, F. Henry Sipe, will serve as alternate.

A committee on oak wilt is to be appointed by the chairman to assist in coordinating the work of interested agencies and to provide the assistance of Section members in investigative and control work relating to the disease.

Canadian Foresters Sponsor Woodlot Project

Sponsored by the Canadian Institute of Forestry, a cooperative program to improve woodland management is underway in Canada. The work of the participating agencies is coordinated by the C.I.F. Woodlot Management Promotion Committee.

The Canadian Institute of Forestry succeeded the Canadian Society of Forest Engineers last year. It is comparable to the Society of American Foresters in organization and objectives.

C.I.F. Section committees are active in the project, sponsoring contests, giving talks, reforesting school property, and encouraging better forest management by settlers on their own land as well as on Crown-owned land.

The Canadian Forestry Association, service clubs, labor unions, forest industries, agricultural firms, schools, newspapers, chambers of commerce, and Dominion and Province agencies are all cooperating in the program.

J. L. Van Camp is secretary of the C.I.F. Woodlot Management Promotion Committee. A member of the Society of American Foresters, he is employed by the Canadian Forestry Association.

Candidates for Membership

Candidates for membership whose applications were received in the Society office prior to July 1, 1951 are listed below. Names, positions, addresses, and education are given.

Action regarding the eligibility of these candidates will be taken by the Council as of September 1, 1951. Comments, protests, or important information regarding the qualifications for membership of candidates listed are invited from present voting members. All such communications are kept strictly confidential, being used only by the Council in taking final action on applications. Correspondence should be received in the Society office prior to September 1, 1951.

The names of those candidates who are elected will be published in the Society Affairs department of the October 1951 JOURNAL OF FORESTRY. The names of those who signify their acceptance of election will be published in subsequent issues of the JOURNAL.

Allegheny Section

Junior Grade

Beard, J. T., Box 96, Berwick, Pa.; Pa. State, B.S.F., 1951. (Student, 1951).

Benedict, D. G., Box 152, Bethany, W. Va.; W. Va. Univ., B.S.F., 1951. (Student, 1951).

Bosselman, H. H., Dept. of Forestry, Pa. State College, State College, Pa.. Pa. State, B.S.F., 1951. (Student, 1951).

Coy, R. M., 324 Prospect St., State College, Pa.; Pa. State, B.S.F., 1951. (Student, 1951).

Craft, E. P., 902 Highland Ave., Princeton, W. Va.; W. Va. Univ., B.S.F., 1951. (Student, 1951).

Crosby, M. R., 323 Watts St., Morgantown, W. Va.; W. Va. Univ., B.S.F., 1951. (Student, 1951).

Dewey, J. E., 105 Allegheny Ave., Coudersport, Pa.; Pa. State, B.S.F., 1951. (Student, 1951).

Eberhart, J. A., 4456 Foster Ave., State College, Pa.; Pa. State, B.S.F., 1951. (Student, 1951).

Enos, J. J., 116 Elmwood St., Turtle Creek, Pa.; Pa. State, B.S.F., 1951. (Student, 1951).

Geiger, H. W., Forester, Glatfelter Pulpwood Co., Spring Grove, Pa.; Pa. State, B.S.F., 1944. Reinstatement.

Hall, J. L., 100 W. Water St., Muncy, Pa.; Pa. State, B.S.F., 1951. (Student, 1951).

Haney, G. P., 342 W. Ridge Rd., Erie, Pa.; Pa. State, B.S.F., 1951. (Student, 1951).

Kalwarski, S. A., 730 Seventh St., New Kensington, Pa.; Pa. State, B.S.F., 1951. (Student, 1951).

Landon, P. E., Box 65, Pine Grove Mills, Pa.; Pa. State, B.S.F., 1951. (Student, 1951).

Lantz, N. J., Bergton, W. Va.; W. Va. Univ., B.S.F., 1951. (Student, 1951).

Looney, J. F., 805 Stewart St., Morgantown, W. Va.; W. Va. Univ., B.S.F., 1951. (Student, 1951).

McDonald, W. R., 326 W. Pine St., Butler, Pa.; Pa. State, B.S.F., 1951. (Student, 1951).

Meenan, C. D., 124 South St., Ridgway, Pa.; Pa. State, B.S.F., 1951. (Student, 1951).

Miller, J. E., Nallen, W. Va.; W. Va. Univ., B.S.F., 1951. (Student, 1951).

Moore, H. J., 1638 N. Newkirk St., Phila., Pa.; Pa. State, B.S.F., 1951. (Student, 1951).

Moore, R. A., 83 Newton St., Morgantown, W. Va.; W. Va. Univ., B.S.F., 1951. (Student, 1951).

Perash, J. H., 83 North Landon Ave., Kingston, Pa.; Pa. State, B.S.F., 1951. (Student, 1951).

Rolston, K. S., 239 W. Walnut Lane, Phila., Pa.; Pa. State, B.S.F., 1951. (Student, 1951).

Sharp, C. B., Renick, W. Va.; W. Va. Univ., B.S.F., 1951. (Student, 1951).

Shogren, P. W., 1450 La Clair Ave., Pittsburgh, Pa.; Pa. State, B.S.F., 1951. (Student, 1951).

Shriver, T. J., 160-22 St., Wellsburg, W. Va.; W. Va. Univ., B.S.F., 1951. (Student, 1951).

Sohaney, A. L., 2012 Univ. Ave., Morgantown, W. Va.; W. Va. Univ., B.S.F., 1951. (Student, 1951).

Sweetland, T. W., W. Va. Univ., Morgantown, W. Va.; W. Va. Univ., B.S.F., 1951. (Student, 1951).

Stambaugh, W. J., 125 E. Nittany Ave., State College, Pa.; Pa. State, B.S.F., 1951. (Student, 1951).

Tissue, O. C., Jr., 1217 Chestnut St., Connellsville, Pa.; Pa. State, B.S.F., 1951. (Student, 1951).

Toler, B. Wharncliffe, W. Va.; W. Va. Univ., B.S.F., 1951. (Student, 1951).

Underwood, E. H., 813 Virginia Ave., Fairmont, W. Va.; W. Va. Univ., B.S.F., 1951. (Student, 1951).

Walton, S. A., 343 Long Rd., Pittsburgh, Pa.; Pa. State, B.S.F., 1951. (Student, 1951).

Appalachian Section

Junior Grade

Beaman, J. H., Box 70, Marion, N. C.; N. C. State, B.S.F., 1951. (Student, 1951).

Cousins, C., Clayton, N. C.; N. C. State, B.S.F., 1951. (Student, 1951).

Dixon, A. C., Duke Univ., Durham, N. C.; Univ. of N. C., B.S., (Forestry), 1950; Duke, M.F., 1951. (Student, 1951).

Estep, E. M., 315 Pennton Ave., Lenoir, N. C.; N. C. State, B.S.F., 1951. (Student, 1951).

Etchison, P. B., N. C. State College, Durham, N. C.; N. C. State, B.S.F., 1951. (Student, 1951).

Gentry, R. W., Box 484, Lumberton, N. C.; N. C. State, B.S.F., 1951. (Student, 1951).

Greenwood, L. D., N. C. State College, Raleigh, N. C.; N. C. State, B.S.F., 1951. (Student, 1951).

Hance, J. T., Heath Springs, S. C.; N. C. State, B.S.F., 1951. (Student, 1951).

Hawes, R. B., Duke Sta., Durham, N. C.; Duke, B.S., 1950; M.F., 1951. (Student, 1951).

Henson, I. C., 15E Vetville, Raleigh, N. C.; N. C. State, B.S.F., 1951. (Student, 1951).

Maple, W. R., Duke Sta., Durham, N. C.; Rutgers Univ., B.S., 1949; Duke, M.F., 1951. (Student, 1951).

Penland, R. F., 1306 Hillsboro St., Raleigh, N. C.; N. C. State, B.S.F., 1951. (Student, 1951).

Reid, J. R., Jr., 263 Forest Hill Drive, Asheville, N. C.; N. C. State, B.S.F., 1951. (Student, 1951).

Schmidt, A. N., Fairfield Forest Products Co., Newberry, S. C.; Pa. State, B.S.F., 1950.

Scholtes, W. E., 1810 Elizabeth Ave., Winston-Salem, N. C.; N. C. State, B.S.F., 1951. (Student, 1951).

Westbury, H. M., Box 756, McColl, S. C.; N. C. State, B.S.F., 1951. (Student, 1951).

Willoughby, C. C., R.F.D. No. 3, Ahoskie, N. C.; N. C. State, B.S.F., 1951. (Student, 1951).

Central Rocky Mountain Section

Junior Grade

Assmus, C. W., Box 66, Lake Andes, S. Dak.; Colo. A & M., B.S.F., 1951. (Student, 1951).

Belt, R. S., Box 1047, Cortez, Colo.; Colo. A & M., B.S.F., 1951. (Student, 1951).

Berndt, H. W., Brookings, S. Dak.; Colo. A & M., B.S.F., 1951. (Student, 1951).

Brown, D. L., Mitchell, Nebraska; Colo. A & M., B.S.F., 1951. (Student, 1951).

Bryan, W. J., 167 Veterans Village, Ft. Collins, Colo.; Colo. A & M., B.S.F., 1951. (Student, 1951).

Case, R. M., U.S.F.S., Mountainview, Wyo.; Colo. A & M., B.S.F., 1951. (Student, 1951).

Davidson, A. C., Colo. A & M., Ft. Collins, Cool.; Colo. A & M., B.S.F., 1951. (Student, 1951).

Fillmore, W. J., Asst. State Forester, Dept. of Game, Fish and Parks, Hermosa, S. Dak.; Univ. of Minn., B.S.F., 1947.

Marti, D. W., 614 Mathews St., Ft. Collins, Colo.; Colo. A & M., B.S.F., 1951. (Student, 1951).

Minister, D. M., Jr., 4910 King St., Denver, Colo.; Colo. A & M., B.S.F., 1950.

Schoening, J. R., Box 82, Loup City, Nebraska; Colo. A & M., B.S.F., 1951. (Student, 1951).

Associate Grade

Berner, L. M., Leader-Big Game Survey, Dept. of Game, Fish and Parks, Pierre, S. Dak.; Univ. of Minn., B.S., 1941; Univ. of Mo., M.A., 1947.

Central States Section

Junior Grade

Baker, D. H., Lupton, Mich., Mich. State, B.S.F., 1951. (Student, 1951).

Bassett, J. R., 65 East Iroquois Rd., Pontiac, Mich.; Univ. of Mich., B.S.F., 1951. (Student, 1951).
Baumgartner, L. F., Drayton Plains, Mich.; Mich. State, B.S.F., 1951. (Student, 1951).
Beckwith, O. D., Dept. of Forestry, Purdue Univ., West Lafayette, Indiana; Purdue, B.S.F., 1951. (Student, 1951).
Bernardin, P. E., 912 Rose Ave., Ann Arbor, Mich.; Univ. of Mich., B.S.F., 1951. (Student, 1951).
Blickenstaff, B. S., 317 Vine St., West Lafayette, Indiana; Purdue, B.S.F., 1951. (Student, 1951).
Borden, M. E., Jr., 107 Tyler House, Ann Arbor, Mich.; Univ. of Mich., B.S.F., 1951. (Student, 1951).
Brooks, C. R., 2522 Mt. Vernon Ave., Youngstown, Ohio; Univ. of Mich., B.S.F., 1951. (Student, 1951).
Brown, R. C., 812 A Cherry Lane, East Lansing, Mich.; Mich. State, B.S.F., 1951. (Student, 1951).
Burns, F. H., 314 N. Pleasant St., Jackson, Mich.; Mich. State, B.S.F., 1951. (Student, 1951).
Campbell, J. M., Jr., 34 Cherry Lane Heights, West Lafayette, Indiana; Purdue, B.S.F., 1951. (Student, 1951).
Carpenter, E. M., 606 D, Chestnut Lane, East Lansing, Mich.; Mich. State, B.S.F., 1951. (Student, 1951).
David, G. C., Jr., Dept. of Forestry, Purdue Univ., West Lafayette, Indiana; Purdue, B.S.F., 1951. (Student, 1951).
Davila, G. O., 1253 Malden Court, Willow Run, Mich., Univ. of Mich., B.S.F., 1951. (Student, 1951).
Davis, G. D., Battle Ground, Indiana; Purdue, B.S.F., 1951. (Student, 1951)
Diez, C. M., School of Natural Resources, Univ. of Mich., Ann Arbor, Mich.; Univ. of Mich., B.S.F., 1951. (Student, 1951).
Enslen, R. H., 124 E. Oak St., West Lafayette, Indiana; Purdue, B.S.F., 1951. (Student, 1951).
Essex, B. L., 665 W. Washington, Ionia, Mich.; Mich. State, B.S.F., 1951. (Student, 1951).
Evenson, A. L., 781 Russell, West Lafayette, Indiana; Purdue, B.S.F., 1951. (Student, 1951).
Feeney, C. R., 8017 Maple Ave., Gary, Indiana; Univ. of Mich., B.S.F., 1951. (Student, 1951).
Finger, G. P., 131 Pierce St., West Lafayette, Indiana; Purdue, B.S.F., 1951. (Student, 1951).
Fritz, D. H., 7843 Marquette Ave., Chicago, Ill.; Mich. State, B.S.F., 1951. (Student, 1951).
Funk, D. T., 427 State St., West Lafayette, Indiana; Purdue, B.S.F., 1951. (Student, 1951).
Gordon, S. M., 114 North 15th St., Logansport, Indiana; Purdue, B.S.F., 1951. (Student, 1951).
Harris, R. L., 417 Linden St., East Lansing, Mich.; Mich. State, B.S.F., 1951. (Student, 1951).
Hughes, T. T., 22492 Brittany, East Detroit, Mich.; Univ. of Mich., B.S.F., 1951. (Student, 1951).
Jeffrey, W. H., 3900 Liberty Rd., Ann Arbor, Mich.; Univ. of Mich., B.S.F., 1951. (Student, 1951).
Jewell, F. F., Dept. of Forestry, Mich. State College, East Lansing, Mich.; Mich. State, B.S.F., 1951. (Student, 1951).
Keller, R. G., 534 Detroit St., Ann Arbor, Mich.; Univ. of Mich., B.S.F., 1951. (Student, 1951).
Klein, P. L., East Shaw Hall, Mich. State College, East Lansing, Mich.; Mich. State, B.S.F., 1951. (Student, 1951).
Lahr, J. D., 4030 Forest Manor, Indianapolis, Indiana; Purdue, B.S.F., 1951. (Student, 1951).
Lawrence, W. T., Perronville, Mich.; Univ. of Mich., B.S.F., 1951. (Student, 1951).
Long, M. G., Jr., 129 East Shaw Hall, Mich. State College, East Lansing, Mich.; Mich. State, B.S.F., 1951. (Student, 1951).
Lord, W. B., 269 McMillan Rd., Grosse Pointe Farms, Mich.; Univ. of Mich., B.S.F., 1951. (Student, 1951).
Mackie, P. S., 515 S. 5th Ave., Ann Arbor, Mich.; Univ. of Mich., B.S.F., 1951. (Student, 1951).
Martindale, D. L., 409 West Shaw Hall, East Lansing, Mich.; Mich. State, B.S.F., 1951. (Student, 1951).
Mason, R. L., 124 Univ. Drive, East Lansing, Mich.; Mich. State, B.S.F., 1951. (Student, 1951).
McArdle, R. C., School of Natural Resources, Univ. of Mich., Ann Arbor, Mich.; Univ. of Mich., B.S.F., 1951. (Student, 1951).
McGregor, D. C., 5059 Cleveland St., Gary, Indiana; Purdue, B.S.F., 1951. (Student, 1951).
McGregor, R. C., 135 N. Seventh St., Ann Arbor, Mich.; Univ. of Mich., B.S.F., 1951. (Student, 1951).
Merrill, H. C., 1065 Conway Court, Willow Run, Mich.; Univ. of Mich., B.S.F., 1951. (Student, 1951).
Mosteller, J. B., Jr., 916 Crain St., Evanston, Ill.; Univ. of Mich., B.S.F., 1951. (Student, 1951).
Mueller, C. A., Dept. of Forestry, Mich. State College, East Lansing, Mich.; Mich. State, B.S.F., 1951. (Student, 1951).
Myron, M. M., Serena, Ill.; Purdue, B.S.F., 1951. (Student, 1951).
Noblet, J. C., 402 Emerald St., Houghton, Mich.; Mich. State, B.S.F., 1951. (Student, 1951).
Ouellette, C. G., 313 Chocolay St., Munising, Mich.; Mich. State, B.S.F., 1951. (Student, 1951).
Paddock, W. R., Dept. of Forestry, Mich. State College, East Lansing, Mich.; Mich. State, B.S.F., 1951. (Student, 1951).
Parsons, R. G., 14657 Wisconsin, Detroit, Mich.; Mich. State, B.S.F., 1951. (Student, 1951).
Patton, D. L., 2093 Arthur Ave., Lakewood, Ohio; Mich. State, B.S.F., 1951. (Student, 1951).
Peterson, T. A., School of Natural Resources, Univ. of Mich., Ann Arbor, Mich.; Univ. of Mich., B.S.F., 1951. (Student, 1951).
Post, A. J., 1234 White St., Ann Arbor, Mich.; Univ. of Mich., B.S.F., 1951. (Student, 1951).
Prentice, W. W., 1321 Clara, Ft. Wayne, Indiana; Purdue, B.S.F., 1951. (Student, 1951).
Richards, J. R., 317 Vine St., West Lafayette, Indiana; Purdue, B.S.F., 1951. (Student, 1951).
Rinehart, D. E., 528 E. Bradfort St., Marion, Indiana; Purdue, B.S.F., 1951. (Student, 1951).
Roth, P. L., Box 778, West Lafayette, Indiana; Purdue, B.S.F., 1951. (Student, 1951).
Sandhusen, W. H., Dept. of Forestry, Mich. State College, East Lansing, Mich.; Mich. State, B.S.F., 1951. (Student, 1951).
Sheek, R. N., 690 E. Jefferson St., Franklin, Indiana; Purdue, B.S.F., 1951. (Student, 1951).
Stevens, G. M., 15050 Plainview Rd., Detroit 23, Mich.; Mich. State, B.S.F., 1951. (Student, 1951).
Straka, P. R., 1322 S. Ridgeland Ave., Berwyn, Ill.; Purdue, B.S.F., 1951. (Student, 1951).
Strang, J. H., 24915 Fairmont, Dearborn, Mich.; Mich. State, B.S.F., 1951. (Student, 1951).
Sulskis, A., 114½ Alsdorf St., Lansing, Mich.; Mich. State, B.S.F., 1951. (Student, 1951).
Tallia, G. J., 242 Granite Ave., Haledon, N. J.; Mich. State, B.S.F., 1951. (Student, 1951).
Thornton, D. L., 907-C Cherry Lane, East Lansing, Mich.; Mich. State, B.S.F., 1951. (Student, 1951).
Trew, I. F., 2740 Packard Rd., Ann Arbor, Mich.; Univ. of Mich., B.S.F., 1951. (Student, 1951).
Urie, D. H., 3900 W. Liberty Rd., Ann Arbor, Mich.; Univ. of Mich., B.S.F., 1951. (Student, 1951).
Van der Cook, L. S., 15337 Mc Guire, Wyandotte, Mich.; Univ. of Mich., B.S.F., 1951. (Student, 1951).
Vander Sys, J. T., Box 174, Spring Lake, Mich.; Mich. State, B.S.F., 1951. (Student, 1951).
Viele, D. H., 828 B Chestnut Rd., East Lansing, Mich.; Mich. State, B.S.F., 1951. (Student, 1951).
Walters, R. S., Ludington, Mich.; Mich. State, B.S.F., 1951. (Student, 1951).
Weidner, R. G., 3226 Hyde Park Ave., Cleveland Heights, Ohio; Mich. State, B.S.F., 1951. (Student, 1951).
Wilkinson, W. B., 2707 W. Lexington St., Chicago 12, Ill.; Purdue, B.S.F., 1951. (Student, 1951).
Zitkovich, S. J., 60th S. Elm St., Hinsdale, Ill.; Mich. State, B.S.F., 1951. (Student, 1951).

Columbia River Section

Junior Grade

Abrahamson, R. E., 1011 N. 23rd St., Corvallis, Oreg.; Oregon State, B.S.F., 1951. (Student, 1951).
Andringa, J. J., 320 Lilly Lane, Corvallis, Oreg.; Oregon State, B.S.F., 1951. (Student, 1951).
Bates, S. J., 515 N. 12th St., Corvallis, Oreg.; Oregon State, B.S.F., 1951. (Student, 1951).
Brewer, T. M., 1747 N. 9th St., Corvallis, Oreg.; Oregon State, B.S.F., 1951. (Student, 1951).
Butler, W. E., School of Forestry, Oregon State College, Corvallis, Oreg.; Oregon State, B.S.F., 1951. (Student, 1951).
Caragozian, J. L., School of Forestry, Oregon State College, Corvallis, Oreg.; Oregon State, B.S.F., 1951. (Student, 1951).
Christiansen, L. M., 2500 Monroe St., Corvallis, Oreg.; Oregon State, B.S.F., 1951. (Student, 1951).
Coffell, D. G., 1200 Medford St., Roseburg, Oreg.; Oregon State, B.S.F., 1951. (Student, 1951).
Cole, R. M., 813 N. 28th St., Corvallis, Oreg.; Oregon State, B.S.F., 1951. (Student, 1951).
Collins, D. H., 2509 Monroe St., Corvallis, Oreg.; Oregon State, B.S.F., 1951. (Student, 1951).
Counts, V. J., Box 250, Mulino, Oreg.; Oregon State, B.S.F., 1951. (Student, 1951).
Cowley, I. C., 420 Sixth St., Oregon City, Oreg.; Oregon State, B.S.F., 1951. (Student, 1951).
Dawson, F. S., 935 S. 5th St., Coos Bay, Oreg.; Mich. State, B.S.F., 1950.
Duysen, G. H., 677 S. 19th St., Salem, Oreg.; Oregon State, B.S.F., 1951. (Student, 1951).
Eckstrom, T. F., Jr., 3150 Grant St., Corvallis, Oreg.; Oregon State, B.S.F., 1951. (Student, 1951).
Goodrich, D. S., 314 Hillcrest Place, Baker, Oreg.; Oregon State, B.S.F., 1951. (Student, dent, 1951).
Gould, N. E., U. S. F. S., Parkdale, Oreg.; Oregon State, B.S.F., 1951. (Student, 1951).
Graham, D. A., Jasper, Oreg.; Oregon State, B.S.F., 1951. (Student, 1951).
Haglund, H. L., 3129 S. E. Pine St., Portland, Oreg.; Oregon State, B.S.F., 1951. (Student, 1951).
Hermann, A., Research Engr., Western Pine Assoc., 510 Yeon Bldg., Portland, Oreg. Reinstatement.
Hickerson, W. B. D., 1021 N. 25th St., Corvallis, Oreg.; Oregon State, B.S.F., 1951. (Student, 1951).
Hubbe, G., 404 N. 26th St., Corvallis, Oreg.; Oregon State, B.S.F., 1951. (Student, 1951).
Jones, W. V., 855 Van Buren St., Corvallis, Oreg.; Oregon State, B.S.F., 1951. (Student, 1951).
Juhl, T. C., Jr., 1310 Echo Hollow Rd., Eugene, Oreg.; Oregon State, B.S.F., 1951. (Student, 1951).
Kistner, D. R., U. S. F. S., Lakeview, Oreg.; Oregon State, B.S.F., 1951. (Student, 1951).
Kowal, H. W., Adair Village, Oreg.; Oregon State, B.S.F., 1951. (Student, 1951).
Litten, G. W., 140 N. 23rd St., Corvallis, Oreg.; Oregon State, B.S.F., 1951. (Student, 1951).
Lynd, H. C., 1033 N. 11th St., Corvallis, Oreg.; Oregon State, B.S.F., 1951. (Student, 1951).
Lynn, J. R., School of Forestry, Oregon State College, Corvallis, Oreg.; Oregon State, B.S.F., 1951. (Student, 1951).
McFarland, H. J., 729 N. 13th St., Corvallis, Oreg.; Oregon State, B.S.F., 1951. (Student, 1951).
Moore, F. W., Adair Village, Oreg.; Oregon State, B.S.F., 1951. (Student, 1951).
Mosar, M. A., Adair Village, Oreg.; Oregon State, B.S.F., 1951. (Student, 1951).
Newkirk, V. R., 1747 N. 9th St., Corvallis, Oreg.; Oregon State, B.S.F., 1951. (Student, 1951).
Payette, R. C., 1102 N. 23rd St., Corvallis, Oreg.; Oregon State, B.S.F., 1951. (Student, 1951).
Richardson, W. A., School of Forestry, Oregon State College, Corvallis, Oreg.; Oregon State, B.S.F., 1951. (Student, 1951).
Rossheim, J. D., Box 42, Corvallis, Oreg.; Oregon State, B.S.F., 1951. (Student, 1951).
Schrager, M. H., Adair Village, Oreg.; Oregon State, B.S.F., 1951. (Student, 1951).
Stang, D. A., 15th and Van Vuren St., Corvallis, Oreg.; Oregon State, B.S.F., 1951. (Student, 1951).
Theuerkauf, E. H., 1062 Adams St., Corvallis, Oreg.; Oregon State, B.S.F., 1951. (Student, 1951).
Twombly, A. D., Waldport, Oreg.; Oregon State, B.S.F., 1951. (Student, 1951).
Wanek, J., Box 553, Corvallis, Oreg.; Oregon State, B.S.F., 1951. (Student, 1951).
Wells, S. N., 328 N. 5th St., Corvallis, Oreg.; Oregon State, B.S.F., 1951. (Student, 1951).
Williams, D. N., 3204 N. E. 46th Ave., Portland, Oreg.; Oregon State, B.S.F., 1951. (Student, 1951).

Gulf States Section

Junior Grade

Chick, H., III, Box 5460-B, Baton Rouge, La.; La. State, B.S.F., 1951. (Student, 1951).

Coltharp, G. B., Box 7276, Baton Rouge, La.; La. State, B.S.F., 1951. (Student, 1951).

Burton, K. L., 919 West Melwood St., Houston, Texas; La. State, B.S.F., 1951. (Student, 1951).

Crowell, S. F., Jr., Univ. Sta., Baton Rouge, La.; La. State, B.S.F., 1951. (Student, 1951).

DeGrummond, E. A., Jr., Dist. Forester, Masonite Corp., Laurel, Miss.; La. State, B.S.F., 1950.

Edington, R. C., 3319 Carlotta St., Baton Rouge, La.; La. State, B.S.F., 1951. (Student, 1951).

Finnegan, J. E., 3814 Mibile St., El Paso, Texas; Univ. of Minn., B.S.F., 1940. Reinstatement.

Fox, G., Jr., Univ. Sta., Baton Rouge, La.; La. State, B.S.F., 1951. (Student, 1951).

Hollomon, E. A., Box 7416, Baton Rouge, La.; La. State, B.S.F., 1951. (Student, 1951).

Kelley, F. G., 412 Jefferson St., Natchitoches, La.; La. State, B.S.F., 1951. (Student, 1951).

Morris, G. S., Jr., Colfax, La.; La. State, B.S.F., 1951. (Student, 1951).

Oakes, C. W., Box 8931, Baton Rouge, La.; La. State, B.S.F., 1951. (Student, 1951).

Reynolds, G. L., 429 S. 21st St., Baton Rouge, La.; La. State, B.S.F., 1951. (Student, 1951).

Rhodes, J. W., Univ. Sta., Baton Rouge, La.; La. State, B.S.F., 1951. (Student, 1951).

Sibley, R. C., 5214 Bre-kenridge Ave., Baton Rouge, La.; La. State, B.S.F., 1951. (Student, 1951).

Williams T. D., Univ. Sta., Baton Rouge, La.; La. State, B.S.F., 1951. (Student, 1951).

Affiliate Grade

Lilley, J. R., Forestry Aide, U. S. Forest Service, Huntsville, Texas.

Waller, D. B., Tbr. Sales and Markings, Champion Paper and Fiber Co., Huntsville, Texas; Stephen F. Austin State College, B.S., (Forestry), 1948.

Associate Grade

Kurth, E. L. President, Lufkin Amusement Co., Lufkin, Texas; Southwestern Univ., B.S., (Liberal Arts), 1905.

Stevens, B. M., Jr., Vice President, Richton Tie and Tbr. Co., Richton, Miss.; Ga. School of Tech., B.S., (Industrial Mgmt.).

Inland Empire Section

Junior Grade

Carmichael, R. L., Univ. Sta., Moscow, Idaho; Univ. of Idaho, B.S.F., 1951. (Student, 1951).

Cherry, P. E., N. Main St., Moscow, Idaho; Univ. of Idaho, B.S.F., 1951. (Student, 1951).

Cook, F. T., Univ. Sta., Moscow, Idaho; Univ. of Idaho, B.S.F., 1951. (Student, 1951).

Gilbertson, H. W., Jr., Box 54, Chrisman Hall, Moscow, Idaho; Univ. of Idaho, B.S.F., 1951. (Student, 1951).

Gorsuch, H. L., 430 East A. St., Moscow, Idaho; Univ. of Idaho, B.S.F., 1951. (Student, 1951).

Heiner, H. R., Lindley Hall, Moscow, Idaho; Univ. of Idaho, B.S.F., 1951. (Student, 1951).

Holton, C. L., Univ. Sta., Moscow, Idaho; Univ. of Idaho, B.S.F., 1951. (Student, 1951).

Land, H. C., Jr., Crossler Apts., Moscow, Idaho; Univ. of Idaho, B.S.F., 1951. (Student, 1951).

McMahon, R. O., Box 26, Chrisman Hall, Moscow, Idaho; Univ. of Idaho, B.S.F., 1951. (Student, 1951).

Nobis, R. S., West Sixth Vets' Village, Moscow, Idaho; Univ. of Idaho, B.S.F., 1951. (Student, 1951).

Nottingham, C. R., Forestry Aide, Riggins Rgr. Sta., Riggins, Idaho; W. Va. Univ. B.S.F., 1951.

Stahl, M. K., 346 Phillips, Moscow, Idaho; Univ. of Idaho, B.S.F., 1951. (Student, 1951).

Intermountain Section

Junior Grade

Bones, W. F., Jr., Utah State Agric. College, Logan, Utah; Utah State, B.S.F., 1951. (Student, 1951).

Craine, M. E., Prefab 1807, Logan, Utah; Utah State, B.S.F., 1951. (Student, 1951).

Cushman, H., 44 South, Logan, Utah; Utah State, B.S.F., 1951. (Student, 1951).

Hawkes, L. E., Utah State Agric. College, Logan, Utah; Utah State, B.S.F., 1951. (Student, 1951).

Kearns, F. W., 44 South, Logan, Utah; Utah State, B.S.F., 1951. (Student, 1951).

Price, J. E., Utah State Agric. College, Logan, Utah; Utah State, B.S.F., 1951. (Student, 1951).

Rickman, S. H., Utah State Agric. College, Logan, Utah; Utah State, B.S.F., 1951. (Student, 1951).

Sader, D. A., Utah State Agric. College, Logan, Utah; Utah State, B.S.F., 1951. (Student, 1951).

Shilling, G. E., Utah State Agric. College, Logan, Utah; Utah State, B.S.F., 1951. (Student, 1951).

Spencer, J. V., Prefab 903, Logan, Utah; Utah State, B.S.F., 1951. (Student, 1951).

Kentucky-Tennessee Section

Junior Grade

Burton, R. P., Jr., 910 N. Belvedere Blvd., Memphis, Tenn.; Univ. of Fla., 1951. (Student, 1951).

New England Section

Junior Grade

Arnold, P., School of Forestry, Yale Univ., New Haven, Conn.; Yale, B.S., 1950; M.F., 1951. (Student, 1951).

Baird, C. O., School of Forestry, Yale Univ., New Haven, Conn.; Univ. of Tenn., B.S., 1947; Yale, M.F., 1951. (Student, 1951).

Banusevich, F. J., Paris Mfg. Co., West Milan, N. H.; Mich. State, B.S.F., 1950.

Bigney, F. H., Univ. of Maine, Trailer No. 30, Orono, Me.; Univ. of Me., B.S.F., 1951. (Student, 1951).

Bond, R. S., 85 Alexander Ave., Belmont, Mass.; Univ. of Mass., B.S.F., 1951. (Student, 1951).

Coachman, L. K., Dept. of Forestry, Univ. of Me., Orono, Me.; Darthmouth College, A.B., 1948; Yale, M.F., 1951. (Student, 1951).

Dimock, E. J., School of Forestry, Yale Univ., New Haven, Conn.; Yale, B.S., 1950; M.F., 1951. (Student, 1951).

Eaton, R. M., 41 Monroe Ave., Westbrook, Me.; Univ. of Me., B.S.F., 1951. (Student, 1951).

Eisenmenger, R. W., 39 Dana St., Amherst, Mass.; Amherst College, B.A., Yale, M.F., 1951. (Student, 1951).

Grove, E. R., Univ. Trailer No. 15, Orono, Me.; Univ. of Me., B.S.F., 1951. (Student, 1951).

Gould, W. P., 115 East Quincy St., North Adams, Mass.; Univ. of Mass., B.S., 1950; Yale, M.F., 1951. (Student, 1951).

Gullion, B. S., 79 Harold St., Melrose, Mass.; Univ. of Mass., B.S.F., 1951. (Student, 1951).

Haines, W. H. B., School of Forestry, Yale Univ., New Haven, Conn.; Oberlin College, B.A., 1949; Yale, M.F., 1951. (Student, 1951).

Ker, J. W., School of Forestry, Yale Univ., New Haven, Conn.; Univ. of B.C., B.A., 1941; Yale, M.F., 1951. (Student, 1951).

Kilbreth, H. E., Jr., 208 Forest Ave., Orono, Me.; Univ. of Me., B.S.F., 1951. (Student, 1951).

Kissick, N. L., School of Forestry, Yale Univ., New Haven, Conn.; Univ. of Toronto, B.S., 1942; Yale, M.F., 1951. (Student, 1951).

Ladd, A. B., Stillwater Ave., Stillwater, Me.; Univ. of Me., B.S.F., 1951. (Student, 1951).

McLeary, F. J., South Apt., 12-E., Orono, Me.; Univ. of Me., B.S.F., 1951. (Student, 1951).

Mitchell, H. W., Asst. Rgr., Green Mt. National Forest, Rutland, Vt.; Pa. State, B.S.F., 1937. Reinstatement.

Page, D. S., 3 Arlington Place, Haverhill, Mass.; Harvard, A.B., 1949; Yale, M.F., 1951. (Student, 1951).

Peters, D. M., 310 S. St., Jamaica Plains, Mass.; Univ. of Mass., B.S., 1951. (Student, 1951).

Roberts, H. A., Box 103, Dexter, Me.; Univ. of Me., B.S.F., 1951. (Student, 1951).

Smith, D. B. H., Jr., 140 Oak St., Lewiston, Me.; Univ. of Me., B.S.F., 1951. (Student, 1951).

Smith, H. W., Jr., 127 Maple St., Lee, Mass.; Dartmouth College, B.A., 1949; Yale, M.F., 1951. (Student, 1951).

Sutherland, K. I., 72 Main St., Shelburne Falls, Mass.; Univ. of Mass., B.S.F., 1951. (Student, 1951).

Thompson, T. A. A., 205 Prospect St., New Haven, Conn.; Yale, B.S., 1950; M.F., 1951. (Student, 1951).

Tuttle, R. A., Univ. of Me., A.T.D. House, Orono, Me.; Univ. of Me., B.S.F., 1951. (Student, 1951).

Walker, E. B., Cornwall, Conn.; Yale, B.S., 1949; M.F., 1951. (Student, 1951).

Willis, A. C., 8 Benno-h Rd., Stillwater, Me.; Univ. of Me., B.S.F., 1951. (Student, 1951).

Affiliate Grade

Smith, J. T., Asst. Dist. Forester, Cons. Paper Corp., Grand Mere, Canada; Univ. of Toronto, B.S., (Forestry, 1948.).

New York Section

Junior Grade

Bailey, H. J., College of Forestry, State Univ. of New York, Syracuse, N. Y.; State Univ. of N. Y., B.S.F., 1951. (Student, 1951).

Bates, J. D., Box 48, Reading Center, N. Y.; State Univ. of N. Y., B.S.F., 1951. (Student, 1951).

Bockes, O. D., 115 Kirkpatrick St., East Syracuse, N. Y.; State Univ. of N. Y., B.S.F., 1951. (Student, 1951).

Bronson, E. W., Slocum Heights, Syracuse, N. Y.; State Univ. of N. Y., B.S.F., 1951. (Student, 1951).

Cameron, G. P., 76 Seymour St., Middlebury, Vt.; State Univ. of N. Y., B.S.F., 1951. (Student, 1951).

Chapman, H. H., Park Rgr., Saratoga Nat'l. Historical Park, Stillwater, N. Y.; Colo. A & M., B.S.F., 1949.

Condron, T. H., 209 Allis Court, Syracuse, N. Y.; State Univ. of N. Y., B.S.F., 1951. (Student, 1951).

Egan, P. H., 142 Paul Ave., Syracuse, N. Y.; State Univ. of N. Y., B.S.F., 1951. (Student, 1951).

Emond, R. J. T., College of Forestry, State Univ. of N. Y., Syracuse, N. Y.; State Univ. of N. Y., B.S.F., 1951. (Student, 1951).

Epstein, E., 129 W. Brighton Ave., Syracuse, N. Y.; State Univ. of N. Y., B.S.F., 1951. (Student, 1951).

Fry, D. H., 118 East Main St., Avon, N. Y.; State Univ. of N. Y., B.S.F., 1951. (Student, 1951).

Fulton, P. A., Jr., Collendale A-4, Syracuse Univ., Syracuse, N. Y.; State Univ. of N. Y., B.S.F., 1951. (Student, 1951).

Godden, J. A., 263 E. Sixth St., Oswego, N. Y.; State Univ. of N. Y., B.S.F., 1951. (Student, 1951).

Goodrich, R. S., 117 Allis Court, Syracuse, N. Y.; State Univ. of N. Y., B.S.F., 1951. (Student, 1951).

Hadley, D. L., 2044 South Ave., Syracuse, N. Y.; State Univ. of N. Y., B.S.F., 1951. (Student, 1951).

Henderson, J. H., Jr., College of Forestry, State Univ. of N. Y., Syracuse, N. Y.; State Univ. of N. Y., B.S.F., 1951. (Student, 1951).

Hudson, H. H., 76 West Fifth St., Dunkirk, N. Y.; State Univ. of N. Y., B.S.F., 1951. (Student, 1951).

Jensen, A. C., 20 Trolley St., Syracuse, N. Y.; State Univ. of N. Y., B.S.F., 1951. (Student, 1951).

Karnig, J. J., 836 Washington Ave., Albany, N. Y.; State Univ. of N. Y., B.S.F., 1951. (Student, 1951).

Lawrence, A. C., Lacona, N. Y.; State Univ. of N. Y., B.S.F., 1951. (Student, 1951).

Lock, R. H., 685 West Onondaga St., Syracuse, N. Y.; State Univ. of N. Y., B.S.F., 1951. (Student, 1951).

Lowe, W. B, 29 Tolley St, Syracuse, N. Y.; State Univ. of N. Y., B.S.F., 1951. (Student, 1951).

Lyon, R. E. A., King St., Chappaqua, N. Y.; State Univ. of N. Y., B.S.F., 1951. (Student, 1951).

McConnell, J. M., 520 West 188 St., N. Y.; State Univ. of N. Y., B.S.F., 1951. (Student, 1951).

Miller, J. F., 37 Reed St., Syracuse, N. Y.; State Univ. of N. Y., B.S.F., 1951. (Student, 1951).

Morse, W. K., 201 1st St., Hollis, L. I., N. Y.; State Univ. of N. Y., B.S.F., 1951. (Student, 1951).

Nachod, L. H., 34th Ave., Jackson Heights, L. I., N. Y.; State Univ. of N.Y., B.S.F., 1951. (Student, 1951).

Nichols, J. O., 631 Univ. Ave., Rochester, N. Y.; State Univ. of N. Y., B.S.F., 1951. (Student, 1951).

Patterson, W. C., 116 Comstock Ave., Syracuse, N. Y.; State Univ. of N. Y., B.S.F., 1951. (Student, 1951).

Sherwood, G. P., 76 Perry Place, Canandaigua, N. Y.; State Univ. of N. Y., B.S.F., 1951. (Student, 1951).

Schaufler, P. G., RFD., No. 2, Van Buren Rd., Dunkirk, N. Y.; State Univ. of N. Y., B.S.F., 1951. (Student, 1951).

Smith, R. L., Averill Park, N. Y.; State Univ. of N. Y., B.S.F., 1951. (Student, 1951).
Taylor, T. A., 21 West James St., Falconer, N. Y.; State Univ. of N. Y., B.S.F., 1951. (Student, 1951).
Upper, R. B., 403 Olympic Ave., Buffalo, N. Y.; State Univ. of N. Y., B.S.F., 1951. (Student, 1951).
Vernam, W. C., 36 Pondfield Rd., W., Bronxville, N. Y.; State Univ. of N. Y., B.S.F., 1951. (Student, 1951).
Wellinger, F. R., 12 Pine Rd., Syosset, N. Y.; State Univ. of N. Y., B.S.F., 1951. (Student, 1951).

Northern California Section

Junior Grade

Abarr, C. L., 2343 Ellsworth, Berkeley, Calif.; Univ. of Calif., B.S.F., 1951. (Student, 1951).
Barnes, W. S., 1580 Garden Drive, San Bernardino, Calif.; Univ. of Calif., B.S.F., 1951. (Student, 1951).
Biddison, L. R., 17700 San Fernando Rd., Newhall, Calif.; Univ. of Calif., B.S.F., 1951. (Student, 1951).
Blunt, E. F., Box 245, Berkeley, Calif.; Univ. of Calif., B.S.F., 1951. (Student, 1951).
Bright, D. W., 2436 Prospect St., Berkeley, Calif.; Univ. of Calif., B.S.F., 1951. (Student, 1951).
Burtchett, G. W., 183 Hathaway Ave., San Lorenzo, Calif.; Univ. of Calif., B.S.F., 1951. (Student, 1951).
Chandler, C. C., 2010 Broadway St., San Francisco, Calif.; Univ. of Calif., B.S.F., 1951. (Student, 1951).
Cook, H. E., Public Info. Officer, U. S. Army, Long Beach, Calif.; Univ. of Wash., B.S.F., 1949.
Crossfield, F. E., 1176 Univ. Ave., Berkeley, Calif.; Univ. of Calif., B.S.F., 1951. (Student, 1951).
Evans, P. A., Bolinas, Calif.; Univ. of Calif., B.S.F., 1951. (Student, 1951).
Fisher, R. L., 2854 Reynier Ave., Los Angeles, Calif.; Univ. of Calif., B.S.F., 1951. (Student, 1951).
Graham, H., 10300 Viretta Lane, Los Angeles, Calif.; Univ. of Calif., B.S.F., 1951. (Student, 1951).
Hall, G. H., Jr., 2436 Prospect, Berkeley, Calif.; Univ. of Calif., B.S.F., 1951. (Student, 1951).
Hallett, A. F. E., Jr., 586-19th Ave., San Francisco, Calif.; Univ. of Calif., B.S.F., 1951. (Student, 1951).
Helm, R. E., 533 Boulevard Way, Piedmont, Calif.; Univ. of Calif., B.S.F., 1951. (Student, 1951).
Hope, D. G., 960 Buchanan St., Albany, Calif.; Univ. of Calif., B.S.F., 1951. (Student, 1951).
Hughes, W. C., 447 Walden Ave., Walnut Creek, Calif.; Univ. of Calif., B.S.F., 1951. (Student, 1951).
Jope, H. B., 1835 Delaware St., Berkeley, Calif.; Univ. of Calif., B.S.F., 1951. (Student, 1951).
Martin, E. F., 2114 Sacramento, Berkeley, Calif.; Univ. of Calif., B.S.F., 1951. (Student, 1951).
Martinson, K. R., U. S. Navy, c/o F.P.O., San Francisco, Calif.; Univ. of Calif., B.S.F., 1950.
McCluskey, G. E., 52 Paramount Terrace, San Francisco, Calif.; Univ. of Calif., B.S.F., 1951. (Student, 1951).
McDonald, D., 3277 Dakota St., Oakland, Calif.; Univ. of Calif., B.S.F., 1951. (Student, 1951).
McLean, N., Jr., School of Forestry, Univ. of Calif., Berkeley, Calif.; Univ. of Calif., B.S.F., 1951. (Student, 1951).
Meeuwig, R. O., Rockaway Beach, Calif.; Univ. of Calif., B.S.F., 1951. (Student, 1951).
Orr-Ewing, A. L., School of Forestry, Univ. of Calif., Berkeley, Calif.; Edinburgh Univ., B.S., (Forestry), 1939; Univ. of Calif., M.F., 1951. (Student, 1951).
Poppe, C. R., 1809 43rd St., Sacramento, Calif.; Univ. of Calif., B.S.F., 1951. (Student, 1951).
Quadro, F. E., 1017-A Gilman St., Berkeley, Calif.; Univ. of Calif., B.S.F., 1951. (Student, 1951).
Rehbein, D. A., 2428 College Ave., Berkeley, Calif.; Univ. of Calif., B.S.F., 1951. (Student, 1951).
Ross, G. L., 2526 Dwight Way, Berkeley, Calif.; Univ. of Calif., B.S.F., 1951. (Student, 1951).
Smart, E. F., 2520 College Ave., Berkeley, Calif.; Univ. of Calif., B.S.F., 1951. (Student, 1951).
Snow, G. H., 1519 4th Ave., Oakland, Calif.; Univ. of Calif., B.S.F., 1951. (Student, 1951).
Springer, C. J., Box 132, Berkeley, Calif.; Univ. of Calif., B.S.F., 1951. (Student, 1951).
Stark, K. S., 2315 Dwight Way, Berkeley, Calif.; Univ. of Calif., B.S.F., 1951. (Student, 1951).
Taplin, A. D., 2315 Dwight Way, Berkeley, Calif.; Univ. of Calif., B.S.F., 1951. (Student, 1951).
Toland, J. R., 1224 Maine Ave., Richmond, Calif.; Univ. of Calif., B.S.F., 1951. (Student, 1951).
Wood, M. S., 871 Indian Rock Ave., Berkeley, Calif.; Univ. of Calif., B.S.F., 1951. (Student, 1951).

Affiliate Grade

Bayles, W. P., Tbr. Sales Inspector, Shasta Forests Co., Redding, Calif.

Northern Rocky Mountain Section

Junior Grade

Bacon, C. A., 38 Custer St., Missoula, Mont.; Mont. State, B.S.F., 1951. (Student, 1951).
Beatty, B. W., West Glacier, Mont.; Mont. State, B.S.F., 1951. (Student, 1951).
Burnell, F. F., 804 8th Ave., W. Kalispell, Mont.; Mont. State, B.S.F., 1951. (Student, 1951).
Campbell, D. G., 32 Lake, Missoula, Mont.; Mont. State, B.S.F., 1951. (Student, 1951).
Chamberlain, J. E., 12 Custer St., Missoula, Mont.; Mont. State, B.S.F., 1951. (Student, 1951).
Emerson, J. L., Jr., 1025 Helen, Missoula, Mont.; Mont. State, B.S.F., 1951. (Student, 1951).
Hanson, R., 6 Ravalli St., Missoula, Mont.; Mont. State, B.S.F., 1951. (Student, 1951).
Hawley, J. H., 801 S. 3rd St., Missoula, Mont.; Mont. State, B.S.F., 1951. (Student, 1951).
Herrington, R. B., 320 S. 6th St., W., Missoula, Mont.; Mont. State, B.S.F., 1951. (Student, 1951).
Hursh, M. H., School of Forestry, Mont. State Univ., Missoula, Mont., Mont. State, L.S.F., 1951. (Student, 1951).
Lellelid, H. R., 4 Ravalli, Missoula, Mont.; Mont. State, B.S.F., 1951. (Student, 1951).
McCue, R. H., 724 Eddy Ave., Missoula, Mont.; Mont. State, B.S.F., 1951. (Student, 1951).
Olson, A. H., Jumbo Hall, Mont. State Univ., Missoula, Mont.; Mont. State, B.S.F., 1951. (Student, 1951).
Rice, R. M., 51 Carbon, Missoula, Mont.; Mont. State, B.S.F., 1951. (Student, 1951).
Stockton, A. L., Jumbo Hall, Montana State, Missoula, Mont.; Mont. State, B.S.F., 1951. (Student, 1951).
Sullivan, M. J., 505 East Kent Ave., Missoula, Mont.; Mont. State, B.S.F., 1951. (Student, 1951).
Terry, D. C., Jumbo Hall, Montana State, Missoula, Mont.; Mont. State, B.S.F., 1951. (Student, 1951).
Van Gieson, B. R., 144 South 6th St., W., Missoula, Mont.; Mont. State, B.S.F., 1951. (Student, 1951).
Welch, D. G., Jumbo Hall, Montana State, Missoula, Mont.; Mont. State, B.S.F., 1951. (Student, 1951).
Ziegler, R. C., Prefab 13, Missoula, Mont.; Mont. State, B.S.F., 1951. (Student, 1951).

Ozark Section

Junior Grade

Duesing, R. C., 5814 Romaine St., St. Louis, Mo.; Univ. of Mo., B.S.F., 1951. (Student, 1951).
Mabry, J. D., Montgomery City, Mo.; Univ. of Mo., B.S.F., 1951. (Student, 1951).
Sander, I. L., 210 Fairway Village, Columbia, Mo.; Univ. of Mo., B.S.F., 1951. (Student, 1951).
Smith, D. W., Vichy Rd., Rolla, Mo.; Univ. of Mo., B.S.F., 1951. (Student, 1951).
Todd, W. G., 1403 Hinkson St., Columbia, Mo.; Univ. of Mo., B.S.F., 1951. (Student, 1951).
Williams, R. J., Box 194, St. James, Mo.; Univ. of Mo., B.S.F., 1951. (Student, 1951).

Puget Sound Section

Junior Grade

Bailey, E. E., College of Forestry, Univ. of Wash., Seattle, Wash.; Univ. of Wash., B.S.F., 1951. (Student, 1951).
Benfell, L. H., Jr., 133 W. 74th St., Seattle, Wash.; Univ. of Wash., B.S.F., 1951. (Student, 1951).
Carlson, D. E., Box 46, Kelso, Wash.; Univ. of Wash., B.S.F., 1951. (Student, 1951).
Carroll, F. O., 712 N. Broadway, Seattle, Wash.; Univ. of Wash., B.S.F., 1951. (Student, 1951).
Clocksin, D. B., Port Ludlow, Wash.; Univ. of Wash., B.S.F., 1951. (Student, 1951).
Cook, W. B., Box 400, Bellevue, Wash.; Univ. of Wash., B.S.F., 1951. (Student, 1951).
Erikson, D. F., 4616 21st Ave., N.E., Seattle, Wash.; Univ. of Wash., B.S.F., 1951. (Student, 1951).
Gockerell, E. C., 5214 17th N.E., Seattle, Wash.; Univ. of Wash., B.S.F., 1951. (Student, 1951).
Grayum, G. H., Box 82-F., Bothell, Wash.; Univ. of Wash., B.S.F., 1951. (Student, 1951).
Heath, E. H., 7412 43rd Ave., N.E., Seattle, Wash.; Univ. of Wash., B.S.F., 1951. (Student, 1951).
Hill, J. L., Box 190, Graham, Wash.; Univ. of Wash., B.S.F., 1951. (Student, 1951).
Hintz, R. J., 2926 S. 18th St., Tacoma, Wash.; Univ. of Wash., B.S.F., 1951. (Student, 1951).
Johnson, R. E., 1222 E. 68th St., Seattle, Wash.; Univ. of Wash., B.S.F., 1951. (Student, 1951).
Larson, A. G., 11663 Roseburg Ave., S., Seattle, Wash.; Univ. of Wash., B.S.F., 1951. (Student, 1951).
Lee, J. B., Jr., 4459 Union Bay Lane, Seattle, Wash.; Univ. of Wash., B.S.F., 1951. (Student, 1951).
McCollum, W. W., 3303 Hover Place, Seattle, Wash.; Univ. of Wash., B.S.F., 1951. (Student, 1951).
Morgan, D. W., 4323 Eastern Ave., Seattle, Wash.; Univ. of Wash., B.S.F., 1951. (Student, 1951).
Oldroyd, R. W., 8415 Seward Park Ave., Seattle, Wash.; Univ. of Wash., B.S.F., 1951. (Student, 1951).
Ostrowski, P. F., Hatley, Wash.; Univ. of Wash., B.S.F., 1951. (Student, 1951).
Palmer, R. L., 9032 32nd St., S.W., Seattle, Wash.; Univ. of Wash., B.S.F., 1951. (Student, 1951).
Poe, C. M., 6057 31st N.E., Seattle, Wash.; Univ. of Wash., B.S.F., 1951. (Student, 1951).
Powell, A. W., 5563-29 Ave., N.E., Seattle, Wash.; Univ. of Wash., B.S.F., 1951. (Student, 1951).
Rising, R. P., 5033 17th, N.E., Seattle, Wash.; Univ. of Wash., B.S.F., 1951. (Student, 1951).
Rouse, W. R., 2630 13th Ave., Renton, Wash.; Univ. of Wash., B.S.F., 1951. (Student, 1951).
Schmidt, F. D., Deming, Wash.; Univ. of Wash., B.S.F., 1951. (Student, 1951).
Sharpe, G. W., 4304-34 N.E., Seattle, Wash.; Univ. of Wash., B.S.F., 1951. (Student, 1951).
Spencer, L. D., 7042 S. Montgomery St., Tacoma, Wash.; Univ. of Wash., B.S.F., 1951. (Student, 1951).
Strand, R. F., 4703 18th Ave., N.E., Seattle, Wash.; Univ. of Wash., B.S.F., 1951. (Student, 1951).
Summerfield, E. R., 1126-31st Ave., Seattle, Wash.; Univ. of Wash., B.S.F., 1951. (Student, 1951).
Tanner, R. S., 215 West Cedar St., Aberdeen, Wash.; Univ. of Wash., B.S.F., 1951. (Student, 1951).
Tindall, R. W., College of Forestry, Univ. of Wash., Seattle, Wash.; Univ. of Wash., B.S.F., 1951. (Student, 1951).
Turner, W. H., 522 Burleigh Ave., Aberdeen, Wash.; Univ. of Wash., B.S.F., 1951. (Student, 1951).
Vogel, D., 4532 18th Ave., N.E., Seattle, Wash.; Univ. of Wash., B.S.F., 1951. (Student, 1951).
West, R. A., College of Forestry, Univ. of Wash., Seattle, Wash.; Univ. of Wash., B.S.F., 1951. (Student, 1951).
Zepeda, H. A., 255 Gladstone Ave., San Antonio, Texas; Univ. of Wash., B.S.F., 1951. (Student, 1951).

Southeastern Section

Junior Grade

Ball, H. E., Box 94, Robertsdale, Ala.; A.P.I., B.S.F., 1951. (Student, 1951).
Baxter, H. O., R.F.D., No. 2, Decatur, Ga.; Univ. of Ga., B.S.F., 1951. (Student, 1951).
Broyles, H. H., 750 Agric. Drive, Athens, Ga.; Univ. of Ga., B.S.F., 1951. (Student, 1951).
Budreski, F. A., School of Forestry, Univ. of Ga., Athens, Ga.; Univ. of Ga., B.S.F., 1951. (Student, 1951).
Cantelou, L. B., 2016 Lebron Ave., Montgomery, Ala.; Univ. of the South, A.B., 1946; Duke, M.F., 1951.
Capell, J. R., 427 Lapsley St., Selma, Ala.; A.P.I., B.S.F., 1951. (Student, 1951).

Crouch, J. E., 148 Burton St., Auburn, Ala.; A.P.I., B.S.F., 1951. (Student, 1951).
Deason, J. W., Forester, Wm. R. Sizemore and Co., Tallassee, Ala.; A.P.I., B.S.F., 1951.
Douglass, J. R., Box 287, Bessemer, Ala.; A.P.I., B.S.F., 1951. (Student, 1951).
DuLaney, R. F., 685 Cobb St., Athens, Ga.; Univ. of Ga., B.S.F., 1951. (Student, 1951).
Engel, J. E., Box 320, Brodgeport, Ala.; A.P.I., B.S.F., 1951. (Student, 1951).
Gamble, R. J., 212 Magnolia Hall, Auburn, Ala.; A.P.I., B.S.F., 1951. (Student, 1951).
Gay, J. E., Box 8, Agric. Hill Sta., Athens, Ga.; Univ. of Ga., B.S.F., 1951. (Student, 1951).
Green, E. B., Box 48, Blountstown, Fla.; Univ. of Fla., B.S.F., 1950.
Grissom, H. S., Russellville, Ala.; A.P.I., B.S.F., 1951. (Student, 1951).
Hargraves, J. F., Jr., Kingsland, Ga.; Univ. of Ga., B.S.F., 1951. (Student, 1951).
Harrison, J. S., Wilkins Hall, Univ. of Ga., Athens, Ga.; Univ. of Ga., B.S.F., 1951. (Student, 1951).
Hixon, F. T., Eutaw, Ala.; A.P.I., B.S.F., 1950.
Huntemann, J. W., Agric. Hall Campus Center, Athens, Ga.; Univ. of Ga., B.S.F., 1951. (Student, 1951).
Langdale, J. J., Jr., Council, Ga.; Univ. of Ga., B.S.F., 1951. (Student, 1951).
Luke, K. E., 1425 Alabama Ave., S.W., Birmingham, Ala.; A.P.I., B.S.F., 1951. (Student, 1951).
Lyle, E. S., Jr., School of Forestry, Univ. of Georgia, Athens, Ga.; Univ. of Ga., B.S.F., 1951. (Student, 1951).
Mahany, H. L., Jr., Campus Sta., Athens, Ga.; Univ. of Ga., B.S.F. 1951. (Student, 1951).
Maxon, C. E., Box 7, Loachapoka, Ala.; A.P.I., B.S.F., 1951. (Student, 1951).
McDaniel, T. J., Jr., 215 Magnolia Hall, Auburn, Ala.; A.P.I., B.S.F., 1951. (Student, 1951).
McLeod, C. J., Agric. Hill Sta., Athens, Ga.; Univ. of Ga., B.S.F., 1951. (Student, 1951).
Miller, M. L., Jr., Stilson, Ga.; Univ. of Ga., B.S.F., 1951. (Student, 1951).
Nye, W. K., Fairhope, Ala.; A.P.I., B.S.F., 1951 (Student, 1951).
O'Leary, D. F., Agric. Hill, Athens, Ga.; Univ. of Ga., B.S.F., 1951. (Student, 1951).
Proctor, J. C., Box 4, Woodbine, Ga.; Univ. of Ga., B.S.F., 1951. (Student, 1951).
Reese, J. L., Box 1816, Auburn, Ala.; A.P.I., B.S.F., 1951. (Student, 1951).
Ryder, J. D., Jr., Box 162, Pooler, Ga.; Univ. of Ga., B.S.F., 1951. (Student, 1951).
Sheppard, W., 470 Hill St., Athens, Ga.; Univ. of Ga., B.S.F., 1951. (Student, 1951).
Sorensen, C. S. K., 406 N.E. 6th St., Gainesville, Fla.; Univ. of Fla., B.S.F., 1951. (Student, 1951).
Stacy, W. R., 1244 West Univ. Ave., Gainesville, Fla.; Univ. of Fla., B.S.F., 1951. (Student, 1951).
Stanley, F. B., Jr., School of Forestry, Univ. of Ga., Athens, Ga.; Univ. of Ga., B.S.F., 1951. (Student, 1951).
Stokman, J. F., Graves Apts., Auburn, Ala.; A.P.I., B.S.F., 1951. (Student, 1951).
Stuckey, W. N., Jr., Box 428, Bay Minette, Ala.; A.P.I., B.S.F., 1951. (Student, 1951).
Swift, C. S., Box 630, Atmore, Ala.; A.P.I., B.S.F., 1951. (Student, 1951).
Thompson, W. S., Box 144, Crystal Springs, Miss.; A.P.I., B.S.F., 1951. (Student, 1951).
Vick, T. B., Linden, Ala.; A.P.I., B.S.F., 1951. (Student, 1951).
Willett, D. V., Jr., Asst. Dist. Rgr., Gulf States Paper Corp., Tuscaloosa, Ala.; A.P.I., B.S.F., 1950.
Wills, W. W., Asst. Forester, A.P.I., Auburn, Ala.; A.P.I., B.S.F., 1950.
Wilsky, H. F., Box 93, Lutz, Fla.; Univ. of Fla., B.S.F., 1951. (Student, 1951).
Woodall, E. A., School of Forestry, Univ. of Ga., Athens, Ga.; Univ. of Ga., B.S.F., 1951. (Student, 1951).

Member Grade

Hill, F. S., 5410 Seminole Ave., Tampa, Fla.; Univ. of Fla., B.S.F., 1951. (Junior, 1948).

Affiliate Grade

McKee, J. R., Forester and Chief Forester, St. Regis Paper Co., Pensacola, Fla.

Southwestern Section

Junior Grade

Blaser, R. A., Box 240, Flagstaff, Ariz.; Iowa State, B.S.F., 1939.
Maxey, C. A., Park Rgr., Aztec Ruins Nat'l. Monument, Aztec, N. Mex.; Colo. A & M., B.S.F., 1949; M.F., 1949.

Affiliate Grade

Moody, H. W., Forestry Aide, U.S.F.S., Heber Star Route, Arizona.

Upper Mississippi Valley Section

Junior Grade

Allen, M. R., Field Repre., J. C. Campbell Co., 413 W. Mich., Duluth, Minn., Iowa State, B.S.F., 1949.
Bauer, T. J., 1820 Loras Blvd., Dubuque, Iowa; Iowa State, B.S.F., 1951. (Student, 1951).
Beavin, M. J., 137 Lynn Ave., Ames, Iowa; Iowa State, B.S.F., 1951. (Student, 1951).
Benson, H. W., 1406 Adams St., N.E., Minneapolis, Minn.; Univ. of Minn., B.S.F., 1951. (Student, 1951).
Blinks, S. E., School of Forestry, Univ. of Minn., St. Paul, Minn.; Univ. of Minn., B.S.F., 1951. (Student, 1951).
Campbell, D. C., 1066 Pammel Court, Ames, Iowa; Iowa State, B.S.F., 1951. (Student, 1951).
Coates, H. W., 724 Douglas Ave., Eveleth, Minn.; Univ. of Minn., B.S.F., 1951. (Student, 1951).
Corson, P. F., School of Forestry, Univ. of Minn., St. Paul, Minn.; Univ. of Minn., B.S.F., 1951. (Student, 1951).
Findell, V. E., 4456-45th Ave., S., Minneapolis, Minn.; Univ. of Minn., B.S.F., 1940. Reinstatement.
Fisk, C. V., Industrial Forester, Box 524, Charion, Iowa; Iowa State, B.S.F., 1940. Reinstatement.
Haas, R. E., Dept. of Forestry, Iowa State College, Ames, Iowa; Iowa State, B.S.F., 1951. (Student, 1951).
Hansen, N. J., 223 N. Franklin, Ames, Iowa; Iowa State, B.S.F., 1951. (Student, 1951).
Jensen, A. W., Dept. of Forestry, Iowa State College, Ames, Iowa; Iowa State, B.S.F., 1951 (Student, 1951).
Kipp, P. R., 1685 Englewood Ave., St. Paul, Minn.; Univ. of Minn., B.S.F., 1951. (Student, 1951).
Komanetsky, M., 306 Pammel Court, Ames, Iowa; Iowa State, B.S.F., 1951. (Student, 1951).
Kopecky, F. J., 1328 Keston Ave., St. Paul, Minn.; Univ. of Minn., B.S.F., 1951. (Student, 1951).
Lang, J. W., 2717 West St., Ames, Iowa; Iowa State, B.S.F., 1951. (Student, 1951).
Lundgren, A. L., 116 E. Chestnut St., Glenwood, Minn.; Univ. of Minn., B.S.F., 1951. (Student, 1951).
Lynn, A. D., 2410 Rainbow Drive, Cedar Falls, Iowa; Iowa State, B.S.F., 1951. (Student, 1951).
McAninch, C. D., Mount Ayr, Iowa; Iowa State, B.S.F., 1951. (Student, 1951).
McMillan, F. W., Dept. of Forestry, Iowa State College, Ames, Iowa; Iowa State B.S.F., 1951. (Student, 1951).
Merrian, R. A., 228 Gray, Ames, Iowa; Iowa State, B.S.F., 1951. (Student, 1951).
Nelson, R. C., 668 Como Ave., St. Paul, Minn.; Univ. of Minn., B.S.F., 1951. (Student, 1951).
Nervig, S. O., 233 Sheldon Ave., Ames, Iowa; Iowa State, B.S.F., 1951. (Student, 1951).
Oliver, W. D., 1465 Raymond Ave., St. Paul, Minn.; Univ. of Minn., B.S.F., 1951. (Student, 1951).
Peterson, A. A., Centennial Hall, Univ. of Minn., St. Paul, Minn.; Univ. of Minn., B.S.F., 1951. (Student, 1951).
Peterson, D. W., 100 Fifth St., S.E., Little Falls, Minn.; Univ. of Minn., B.S.F., 1951. (Student, 1951).
Plourde, W. L., 324 S. Third St., Stillwater, Minn.; Univ. of Minn., B.S.F., 1951. (Student, 1951).
Prausa, R. L., School of Forestry, Univ. of Minn., St. Paul, Minn.; Univ. of Minn., B.S.F., 1951. (Student, 1951).
Prigge, A. A., Box 31, Lewiston, Minn.; Univ. of Minn., B.S.F., 1951. (Student, 1951).
Roder, D. C., 329 Park St., Ortonville, Minn.; Univ. of Minn., B.S.F., 1951. (Student, 1951).
Rowe, R. W., 4310 W. 7th St., Duluth, Minn.; Univ. of Minn., B.S.F., 1951. (Student, 1951).
Schock, J. H., Dept. of Forestry, Iowa State College, Ames, Iowa; Iowa State, B.S.F., 1951. (Student, 1951).
Seed, G. K., School of Forestry, Univ. of Minn., St. Paul, Minn.; Univ. of Minn., B.S.F., 1951. (Student, 1951).
Sliney, W. J., Jr., 2119½ Univ. Grove E., St. Paul, Minn.; Univ. of Minn., B.S.F., 1951. (Student, 1951).
Sundin, P. A., Lake Lillian, Minn.; Univ. of Minn., B.S.F., 1951 (Student, 1951).
Torgerson, R. G., Box 296, Duluth, Minn.; Univ. of Minn., B.S.F., 1951. (Student, 1951).
Tucker, J. C., 1117 14th Ave., S.E., Minneapolis, Minn.; Univ. of Minn., B.S.F., 1951. (Student, 1951).
Wells, D. P., 2011 Emerson Ave., S., Minneapolis, Minn.; Univ. of Minn., B.S.F., 1951. (Student, 1951).

Washington Section

Junior Grade

Horak, F. J., White Oaks, Silver Spring, Md.; Iowa State, B.S.F., 1951.

Wisconsin-Upper Michigan Section

Junior Grade

Wiese, R. F., Box 360, Milwaukee, Wis.; Univ. of Mich., B.S.F., 1950.

Member Grade

Hatle, O. J., Dist. Forester, William Bonifas Lbr. Co., Iron Mountain, Mich.; Univ. of Minn., B.S.F., 1942. (Junior, 1946).
Yorman, A. J., Inventory Supv., Wis. Cons. Dept., Hayward, Wis.; Univ. of Mich., B.S.F., 1942. (Junior, 1945).

Foreign

Junior Grade

Chapin, W. E., Planter, Firestone Plantations Co., Harbel, Liberia, West Africa; Colo. A & M., B.S.F., 1949.

Candidates Elected

The following persons were elected to the indicated grades of membership by the Council on July 1, 1951.

Junior Grade

Arsenault, R. W.
Baggette, D. E.
Chase, E. E., Jr.
Clark, H. D., Jr.
Cooper, C. F.
Dittman, J. R.
Gause, D. W.
Gildersleeve, R. T.
Golding, A. G.
Greathouse, T. E.
Grette, O. C.
Hack, N. H.
Hamilton, G. J.
Haygood, J. L.
Helm, J. R.
Hodsdon, K. Y.
Imfeld, D. A.
Int-Hout, P. B.
Kirk, C. R.
Kite, J. A., Jr.
Levi, A. C.
Lucas, C. A.
Metcalf, M. E.
Meyer, M. P.
Miller, G. A.
Newell, F. P.
Palmer, W. M., (re)
Sapousek, O. F. A.
Sleight, C. K.
Strauss, R. H.
Stryker, R. K.
Ten Eyck, R. A.
Todd, W. J.
Vredenburgh, M.

Member Grade

Ela, T. F.
Grabow, R. H., (re)
Greene, G. E.
Korotev, J. R.
McKellar, A. D., (re)
Milliken, W. F.
Moore, J. S.
Myers, J. W., Jr.
Nelson, D. S.
Stagelman, H. W., (re)
Straight, F. M.
Turner, J. E., (re)
Vincent, P. Y., (re)

Affiliate Grade

Allen, B.
Bankston, F. T.
Boatman, J. H., Jr.
Brown, B. E.
Corbin, J. L.
Ferguson, H. C.
Knapp, C. A.
Lane, P. T.
McDonald, F. O.
Morgan, C. H.
Morton, L. V.
Parsons, M. B.
Peebles, E. G.

Associate Grade

Copeland, O. L., Jr.
Marsh, J. W.
Meelig, M. L.
Storer, T. L.

New Members and Advancements

The new members and members who have been advanced in grade who are listed below are eligible for participation in activities of the Society of American Foresters, including the meetings and projects of Sections, Chapters, Divisions, and Committees. They have submitted their applications for membership, properly endorsed, and have been declared eligible by the Council. By accepting election these members have indicated their desire to assist the Society in the fulfillment of its objectives.

Allegheny Section

Student Grade

PENNSYLVANIA STATE COLLEGE

Beard, T. J.
Eberhart, J. A.
Graham, J. D.
Meenan, C. D.
Stambaugh, W. J.

WEST VIRGINIA UNIVERSITY

Benedict, D. B. Lantz, N. J.

Junior Grade

Boserman, R. W., Riverton, W. Va.
Burke, H. G., Ripley, W. Va.
Detwiler, J. S., 515 High St., Johnsonburg, Pa.
Hardesty, J. L., Kingwood, W. Va.
Shilling, R. E., Jr., 607 N. Walnut St., Milford, Del.
Whitesell, C. D., Dept. of Research and Education, Solomons, Md.

Member Grade

Appler, H. M., Stokes, State Forest, Branchville, N. J.
Beam, R. C., 137 3rd St., Renova, Pa.
Johnson, F. M., 36 Estill Drive, Charleston, W. Va.
Phoenix, W. B., Box 34, Pine Beach, N. J.
Young, C. A., Jr., Gwynns Falls Park, Baltimore, Md.

Appalachian Section

Student Grade

DUKE UNIVERSITY

Maple, W. R.

NORTH CAROLINA STATE COLLEGE

Hawes, R. B. Henson, I. C.

Junior Grade

Rhyne, T. S., Jr., Clarkston Rd., Whiteville, N. C.

Member Grade

Carmean, W. H., Duke Sta., Durham, N. C.
Cutler, B. H., Box 257, Camden, S. C.
Steensland, M. J., Fort Jackson, S. C.

Central Rocky Mountain Section

Student Grade

COLORADO A & M COLLEGE

Case, R. M. Housley, R. M., Jr.

Junior Grade

Morton, A. D., 3419 South Dowing, Englewood, Colo.
Stadler, G. S., 370 Clayton St., Denver, Colo.

Member Grade

Fillas, T. J., 1091 S. Madison St., Denver, Colo.
Woodward, H. R., 117 South Monroe, Pierre, S. Dak.

Central States Section

Student Grade

MICHIGAN STATE COLLEGE

Nielsen, H. K. Parsons, R. H.
Paddock, W. R.

UNIVERSITY OF MICHIGAN

Barnes, B. V. Lawrence, W. T.
Brooks, C. R. Lord, W. B.
Diez, C. M. Mostaller, J. B., Jr.
Hughes, T. T. Schemnitz, S. D.

PURDUE UNIVERSITY

Beckwith, O. D. Pajkowski, E. J.
Benham, J. G. Richards, J. R.
Borden, T. B. Roth, P. L.
Coughlin, M. E. Sheek, R. N.
David, G. C., Jr. Straka, P. R.
Davis, G. D.

Junior Grade

Harper, R. M., 356 3rd St., Manistee, Mich.
Hebble, K. A., Box 99, Thornton, Ill.
Lechelet, L. E., 1500 Metcalf Court, Willow Run, Mich.
Metcalf, W. B., 111 Old Federal Bldg., Columbus, Ohio.
Schoboy, B. F., Wabash, Indiana
Williams, C. R., 116 Auburn St., Midland, Mich.

Columbia River Section

Student Grade

OREGON STATE COLLEGE

Smith, N. R.

Junior Grade

Faris, T. I., Route 2, Woodburn, Oreg.
Johnson, W. R., 918 S.E., Rhome St., Portland, Oreg.
Schaefer, R. E., Enterprise, Oreg.
Sorber, R. P., Union Creek Ranger Sta., Prospect, Oreg.
Valentine, R. R., Oregon State College, Corvallis, Oreg.
Wilson, O. E., Maple Terrace Apts., Longview, Wash.

Member Grade

Forgey, L. K., U.S.F.S., Bly, Oreg.
Hammack, B. L., St. Helens Pulp and Paper Co., St. Helens, Oreg.
Kennedy, R. B., Kinzua, Oreg.
Kincaid, F. H., c/o Pope and Talbot, Inc., Oakridge, Oreg.

Affiliate Grade

Jorgensen, C. G., 1130 N.E., 48th, Portland, Oreg.

Gulf States Section

Student Grade

LOUISIANA STATE UNIVERSITY

Burton, K. L.

Junior Grade

Baumann, O. H., Brandon, Miss.
Curtin, T. W., Box 1209, Meridian, Miss.
Holman, J., Box 114, Morton, Miss.
Hughes, D. T., 3401st Student Sqdn., Keesler A.F.B., Miss.
Kennedy, T. B., Int. Paper Co., Buchtunna, Miss.
Rehling, H. W., Henderson, Texas
Schildknecht, J. R., Service Battery, Ft. Hood, Texas

Member Grade

Belchrad, L. W., 512 Bilbo St., DeRidder, La.
Frey, R. E., 108 W. 11th, Belton, Texas

Affiliate Grade

Scalfi, R. A., Box 31, DeRidder, La.

Associate Grade

Spears, R. K., 265 Robinson Place, Shreveport, La.

Inland Empire Section

Student Grade

UNIVERSITY OF IDAHO

Cook, F. T.

Junior Grade

Driver, W. R., Fenn Rgr. Sta., Kooskia, Idaho
Stratton, H. W., c/o U.S.F.S., Coeur d'Alene, Idaho
Wentworth, I., Box 16, Gibbs, Idaho

Member Grade

Cox, R. G., Box 1507, Lewiston, Idaho
Oft, Homer H., 1423 Isaacs, Walla Walla, Wash.

New England Section

Student Grade

UNIVERSITY OF MASSACHUSETTS

Stephens, G. R., Jr.

UNIVERSITY OF MAINE

Eaton, R. M. Roberts, H. H.
Ladd, A. B.

YALE UNIVERSITY

Ker, J. W. Walker, E. B.

Junior Grade

Cunningham, P. H., 16 Church St., Calais, Me.
Hannon, L. P., 463 Oak Grove Ave., Fall River, Mass.
Lane, W. N., 2 Kendall St., Rochester, N. H.
McAvoy, T. F., Jr., 47 Gray St., Amherst, Mass.

Affiliate Grade

Sargent, L. B., Jr., Consulting Forester, Plymouth, N. H.

New York Section

Student Grade

STATE UNIVERSITY OF NEW YORK

Godden, J. A. Pierce, S. G.
Henderson, J. H., Jr. Smith, R. L.
Karnig, J. J. Upper, R. B.
Morse, W. K. Wellinger, F. R.
Nachod, L. H.

Junior Grade

Hamilton, L. S., N. Y. State College of Agric., Cornell Univ., Ithaca, N. Y.

Member Grade

Merritt, C., N. Y. State Ranger School, Wanakena, N. Y.

Northern California Section

Student Grade

UNIVERSITY OF CALIFORNIA

Alden, H. M. Taplin, A. D.
Barnes, W. S.

Junior Grade

Feuchter, R. W., U.S.F.S., Mammoth Lakes, Calif.
Fielding, J. E., 1803 Stanford Ave., Stockton, Calif.
Gustafson, R. W., 2927 Millsbrae Ave., Oakland, Calif.
Hastings, L., Box 1591, Redding, Calif.
Maben, R. L., Lilly Gap Logging Camp, West Point, Calif.

Member Grade

Emmert, G. C., Box 1086, Fresno, Calif.
Grogan, G. R., 2708 Sonoma Ave., Santa Rosa, Calif.
Hartman, S. T., 960 Gill Court, Albany, Calif.
Horn, M. J., U.S.F.S., North Fork, Calif.
James, W. C., 1513 Carlisle Drive, San Mateo, Calif.
Stevens, C. W., Calif. Forest and Range Expt. Sta., Berkeley, Calif.

Affiliate Grade

Siler, W., State Div. of Forestry, Fortuna, Calif.

Northern Rocky Mountain Section

Student Grade

MONTANA STATE UNIVERSITY

Beatty, B. W. Sullivan, M. J.
Burnell, F. F. Van Fieson, B. R.
Cullen, D. W.

Ozark Section

Student Grade

UNIVERSITY OF MISSOURI

Illinik, R. H. Taylor, R. F.
Mabry, J. D. Williams, R. J.
Smith, D. W.

Junior Grade

Bruns, R. R., 6611 Bancroft, St. Louis, Mo.
Lodge, G. W., Jr., Box 23, Sheridan, Ark.
Thomasson, G. S., 118 Westwood, Columbia, Mo.

Member Grade

Burnell, J. C., Dierks Lbr. and Coal Co., Broken Bow, Okla.
Kennedy, R. F., Box 120, Hamburg, Ark.
Winger, H. S., Box 251, Malvern, Ark.

Puget Sound Section

Student Grade

UNIVERSITY OF WASHINGTON

Hintz, R. J.

Junior Grade

Crail, C. J., Box 107, Cordova, Alaska
Dobbins, F. D., Box 305, Lebam, Wash.
Lausch, B. A., 1721 Euclid Ave., Bellingham, Wash.
Smith, R. A., Div. of Forestry, Box 1050, Fairbanks, Alaska

Member Grade

Handy, J. E., Whitebirch Place, Wenatchee, Wash.

Southeastern Section

Junior Grade

Albrecht, F. J., Int. Paper Co., Albany, Ga.
Byrd, N. A., 5 Spann Place, Montgomery, Ala.
Connell, T. L., Mt. Vernon, Ga.
Gilmore, A. R., Univ. of Fla., Gainesville, Fla.
Taylor, J., Cook and Co., Haslehurst, Ga.
Vessels, J. L., 202 East Brown St., Lake City, Fla.

Member Grade

Davisson, R. W., Drawer C, Harlem, Ga.
Hale, J. P., Jr., Box 187, Atmore, Ala.

Southern California Section

Junior Grade

Stevens, C. M., Route 1, Newhall, Calif.

Southwestern Section

Junior Grade

Holmes, W. L., U.S.F.S., Flagstaff, Ariz.
Jirsa, D. E., Box 523, Winslow, Ariz.
Palmer, H. S., Box 515, Holbrook, Ariz.

Member Grade

Grece, V. A., 1603 Georgia, Silver City, N. Mex.
Wallace, S., Box 859, Silver City, N. Mex.

Affiliate Grade

Lebsch, B. D., Box 188, Winslow, Ariz.

Upper Mississippi Valley Section

Student Grade

IOWA STATE COLLEGE

Bauer, T. J.
Fry, H. J.
Jarrard, S. E.
McAninch, C. D.
Miller, R. R.
Mortensen, J. M.
Posekany, R. L.
Readinger, E. H.
Stevens, R. E.
Wendel, G. W.

UNIVERSITY OF MINNESOTA

Nelson, R. C.
Prigge, A. A.

Junior Grade

Dickinson, S. K., 2502½ 3rd Ave., W., Hibbing, Minn.
Eschner, A. R., 3217 Lettie St., Ames, Iowa

Member Grade

McKenna, N. J., North Star Tbr. Co., Duluth, Minn.
Rommel, S. S., Box 484, Effie, Minn.

Washington Section

Junior Grade

Hair, D., 109 Briland St., Alexandria, Va.
Liechti, W. M., 724 S. St. Asaph St., Alexandria, Va.

Wisconsin-Upper Michigan Section

Member Grade

Nixon, H. O., Florence, Wis.

Foreign

Member Grade

Swenson, G. W. P., Empresa De Servicios Agricolos Mecanizados, Guayaquil, Ecuador, S. A.

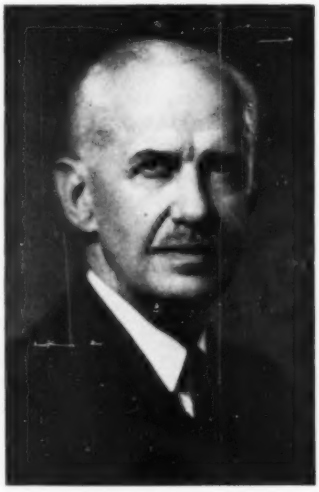
George W. Peavy
(1869-1951)

George Wilcox Peavy, president emeritus of Oregon State College and dean emeritus of the School of Forestry, died at his home in Corvallis on June 24. He was 81 years of age.

Born in Howell, Mich. November 12, 1869, he attended the University of Michigan, receiving the B.S. degree in 1895 and the M.S.F. degree in 1905. In 1936 the university awarded him the degree of doctor of science. In addition, Willamette University conferred the LL.D. degree in 1937.

He was employed by the U. S. Forest Service in Oregon from 1904 to 1910, rising from planting assistant to inspector. He was appointed dean of the School of Forestry at the State College in 1910, a post he held with distinction until he was named president of the college in 1934. He served as president until his retirement in 1940.

Dr. Peavy had long been active in professional, educational and civic affairs. He was member of the Oregon State Board of Forestry for thirty years (1911-1941). He was an associate editor of the JOURNAL OF FORESTRY, and was elected a Fellow of the Society of American Foresters in 1939.



GEORGE W. PEAVY

For thirty years he taught true forestry principles, high professional ethics, and sound character to thousands of young men, many of whom now hold responsible positions in their profession. He never lost enthusiasm for forestry and his affection for foresters.

On his retirement as president of the college in 1940, at a period in life when most men are no longer active, he became a leader in civic affairs in Corvallis. Elected mayor in 1947 he was re-elected for a second two-year term last November.

During his first election campaign, when he was then 77, a forestry friend asked him, "Dean, what in the world do you want to get into politics for at this late date?"

The Dean replied, "What this town needs is some young ideas and I intend to supply them."

It is as a supplier of ideas that Dean Peavy will perhaps be best remembered by the forestry profession to which he contributed a lifetime of devoted, selfless service. He was a great, though modest, man whose highest pleasure it was to spend an hour with forestry friends, preferably young foresters, for he had an intense and abiding faith in American youth.

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Forestry News

R. A. Colgan, Jr., Leaves NLMA for Shasta Forest Company

R. A. Colgan, Jr., has resigned as executive vice president of the National Lumber Manufacturers Association to manage 600,000 acres of forest property for the Shasta Forest Company, with headquarters at Redding, Calif. He will return to Washington in September to complete some pending assignments.

Mr. Colgan came to NLMA in 1945 from Chico, Calif., where he was production manager of the California timber and lumber operations for the Diamond Match Company. It was under his direction that 218,000 acres of the company's California forest holdings were managed on a sustained yield basis and certified as a Tree Farm. Prior to his quarter century of service with Diamond Match, he was forest assistant in wood research at the U. S. Forest Products Laboratory, Madison, Wis.

R. A. Colgan, Jr.

A forestry graduate of Michigan State College in 1913, Mr. Colgan has been a lumberman for over 30 years. He was named an honorary vice president of the American Forestry Association this year. He is also a Member of the Society of American Foresters, a director of the American Standards Association, and chairman of the Lumber Survey Committee of the Department of Commerce.

The interests of the lumber industry have been greatly expanded under Mr. Colgan's guidance. He brought about a wide-awake attitude towards national affairs and stimulated a more active participation in the fight to preserve private enterprise.

N. C. Brown, H. L. Henderson Retire at NYS Forestry College

Nelson Courtlandt Brown, is one of two faculty members in forest utilization who are retiring from the State University College of Forestry, Syracuse, N. Y. Second retirement is that of Mr. Brown's colleague, Hiram L. Henderson, member of the department of which Prof. Brown has been head since 1921.

The combined length of service of the two men totals 68 years at the college which marks its 40th year in September 1951.

Nelson C. Brown is the last active member of the original faculty of seven men at the New York State College of Forestry. He was appointed July 1, 1912 by the late Dr. Hugh P. Baker who had taken over as head of the college a few months earlier. Then aged 27, a native of New Jersey, Mr. Brown came to Syracuse from the faculty of Iowa State College. He had taken degrees at Yale University in 1906 and 1908, and had been with the U. S. Forest Service in the West and South.

He was to teach forest utilization, a phase of forestry knowledge that had not previously been a course and curriculum subject. This innovation, like wood technology and pulp and paper manufacture at the same college soon afterwards, shook forestry orthodoxy at the time but was cheered by industrialists and students.

Professor Brown has become one of the most widely known men in technical education and forestry, and in the wood-using industry. His 12 books and 200 technical and popular articles for periodicals, travels in the U. S. and Europe, frequent addresses, and hundreds of students over 39 years have made him a familiar authority to thousands of persons.

Mr. Brown was named professor of forest utilization in 1914. In 1917 he left for duty with the AEF in Europe as civilian engineer with the 10th Engineers (Forestry). He remained in Europe after the Armistice as forestry advisor to the Czecho-Slovak Republic. In 1921 he returned to the college as head of the Department of Forest Utilization.

In 1933 he helped to coordinate the forestry program of the CCC, in 1943-44 was chairman of the War Council of Syracuse and Onondaga County, in 1945 was chief of the Forestry Division, Allied Control Commission for Italy. He holds the decoration, Knight Crown of Italy (1922).

He wrote his first book, *Elements of Forestry*, in 1914 with the late Franklin F. Moon. His latest, *Logging* (1949), and *Forest Products* (1950) are widely used textbooks.

Hiram L. Henderson was appointed to the New York State College of Forestry faculty in July 1917 and has served uninterruptedly.

A native of Geneva, N. Y., Mr. Henderson was educated at Hobart College and the University of Michigan where he took his B.S. degree in 1915. He had begun working as an engineer for a lumber company in California before completing college and continued his association until returning East to join the College of Forestry faculty.

Mr. Henderson became identified with research in air drying of wood and dry kiln engineering, writing a book which became the standard text on the subjects. He has been consultant on kiln drying to many wood using firms and designer of several hundred commercial dry kilns. The college's short course in dry kiln practice, held 33 times, annually or semi-annually, was organized and given by Mr. Henderson.

Tobacco Company Joins Fire Prevention Program

Smokey and Johnny, well-known cigarette salesman appear side by side in a vivid forest fire prevention poster just issued by the Philip Morris Company and they say in unison: "Break Your Match In Two—Be Sure Your Cigarette Is Out."

The poster, presented by the company as a public service in cooperation with state foresters and the U. S. Forest Service, is available in waterproof cardboard. Salesmen and advertising people will distribute it for display at tobacco counters and other retail stores.

In addition, the posters can be ordered by various clubs and organizations. Sample paper copies, with attached order blanks, are being distributed to conservation departments, experiment stations, and national forests. They can be furnished to cooperating organizations and volunteer fire associations.

GEORGE H. WIRT, *left*, receives the Pennsylvania Forestry Association's 1951 Conservation Award, awarded to him "in recognition of outstanding achievements in the field of Conservation." Shown with Mr. Wirt is A. C. McIntyre, editor of the association's magazine, *Pennsylvania Forests*, and regional forester, Soil Conservation Service, Upper Darby, Pa. George Wirt became Pennsylvania's first state forester in 1901, and served the state in varying capacities in forestry until his retirement in 1946. He was elected a Fellow in the Society of American Foresters in 1948. The Conservation Award was presented at the Pennsylvania Association's 65th anniversary meeting on June 15, 1951.

Displaced Latvians Seek Forestry Jobs

The United States is the new home of some 100 Latvian forestry specialists who were driven from their own country when it was seized by Russia during World War II.

Arvids Kipens, representative of the Latvian foresters in America, states, "Considering that Latvian forestry is highly developed, our foresters have acquired a marked practical skill in silviculture, in the sawmill industry, and in the other phases of forestry. So it is our most ardent wish to earn our living in our specialty, which will warrant the highest efficiency of our activities."

A list of 75 Latvian foresters now in the United States, including address and qualifications, can be obtained from Arvids Kipens, 1705 Baird Street, Madison 5, Wis., or from the Society of American Foresters. Thirty-seven of the group have university degrees in forestry and 17 others are technicians who are graduates of forestry schools. The others are practical woodsmen without forestry school training.

Currently living in most regions of the United States, these men are doing a variety of work in agriculture, construction, joinery, etc. Most are middle aged and with many years of forestry experience. Only a few speak no English; most have a fair to good knowledge of English.

K. Clyde Council

K. Clyde Council, 65, industrialist, statesman, sportsman, and pioneer conservationist died suddenly of a heart attack at his home in Wananish, N. C.

A former state senator and member of the N. C. Board of Conservation and Development, Mr. Council contributed much to the development of North Carolina's forestry program. He was a past-president and, at the time of his death, a director of the North Carolina Forestry Association.

For 30 years he was president and treasurer of the Council Tool Company, manufacturers of about 90 percent of the tools used in the turpentine industry in the United States. As owner of extensive forest holdings in southeastern North Carolina, he was a pioneer and enthusiastic booster of scientific forest management. His properties were among the first to be certified under the N. C. Tree Farms program.

Mr. Council was president and chairman of the board of the nine-branch Waccamaw Bank and Trust Company, a trustee of the Greater University of North Carolina, a director of the Tide Water Power Company and the Carolina Telephone Company. He was also a trustee of the Columbus County Hospital, chairman of the board of deacons of the Waccamaw Presbyterian Church, member of the Lake Waccamaw Lion's Club, associate member of the Society of American Foresters.

Locke Heads Derived Products at Forest Products Laboratory

Dr. Edward G. Locke, chief of the Forest Utilization Service in the Pacific Northwest Forest and Range Experiment Station, has been transferred from Portland, Oreg., to the U. S. Forest Products Laboratory at Madison, Wis. Locke will be chief of the division of derived products, which conducts research in wood chemistry.

A native of Portland, Oreg., Locke received a B.S. degree in chemical engineering in 1928 from Oregon State College and a Ph.D. in organic chemistry from Ohio State University in 1932.

Dr. Locke returned to Oregon State College in 1936 as assistant professor of chemical engineering. While at Oregon State, he was project leader of a charcoal pilot plant investigation and technical advisor for the Oregon Forest Products Laboratory. He was a chemical engineer in the industrial and resource development division of Bonneville Power Administration from 1942 to 1944.

In addition to supervising studies to improve equipment, chemical utilization, and pulp and paper, Dr. Locke worked on the development of the wood hydrolysis process used at the Springfield, Oreg. alcohol plant. He spent 5 months in 1945 in Europe primarily investigating the chemical utilization of wood in Germany.

N. D. and Wis. Nurseries to be Operated by States

A 30-year permit for the Towner Nursery has been issued to the State of North Dakota. The state plans for an annual production of one million conifers needed for windbreak and shelterbelt planting.

The nursery has been inactive since 1943. Laid out in 1935, it was operated by the U. S. Forest Service until September 1937 when, because of a curtailment in land acquisition, it was turned over to the Prairie States Forestry Project. In 1941 it was transferred to the Soil Conservation Service with instructions that the project be liquidated when stock in the nursery was disposed of.

An overhead irrigation system will be made available from the inactive Lydick Nursery at Cass Lake, Minn.

The Wisconsin Conservation Department has taken over the Hugo Sauer Nursery at Rhinelander, including stock and operating facilities. Under the cooperative agreement the nursery will raise stock for the Forest Service.

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Pierce and Irion Retire

Harry Irion, administrative officer of program planning, and Earl S. Pierce, in charge of the federal-state cooperative fire control program, retired from the U. S. Forest Service on June 30, turning in a combined service record of 80 years with the federal government.

For the past 16 years Mr. Irion has served as administrative officer, analyzing new and impending legislation for its effect on Forest Service programs and recommending policies to comply with new legislation.

Mr. Irion, a native of Gallipolis, Ohio, entered the Forest Service in 1908 as a clerk in the office of forest management to handle legal questions connected with timber sales on the national forests. He had 8 years previous experience with the Census Bureau, the Post Office Department, and the Civil Service Commission. He obtained his law degree from George Washington University in 1907 and was admitted to the District Bar the same year.

Mr. Peirce has been in charge of the federal-state cooperative forest fire control program since 1945, handling federal-aid funds appropriated for protecting state and private forest lands against fire.

He was first employed by the Forest Service in 1910 as a forest assistant in the Rocky Mountain Region. For eleven years he served in various capacities on the national forests of that region.

In 1921 he resigned from the Forest Service to become director of extension at the New York State College of Forestry at Syracuse. Returning to the Forest Service in 1933, Mr. Peirce became supervisor of the Superior National Forest in Minnesota. He served for two years as assistant regional forester in the North Central Region, before coming to Washington in 1936.

Mr. Peirce was born in Frankfort, Maine. He received his Ph. D. degree from Yale University in 1909 and studied one year at the Yale Forestry School.

Professor Stebbing Honored by France

Professor E. P. Stebbing, Honorary Member of the Society of American Foresters, and Emeritus Professor of Forestry at the University of Edinburgh, Scotland, has been awarded the cross of Chevalier of the Legion of Honor by the government of France, according to a recent news story in the Edinburgh *Scotsman*.

He has also had reserved in his name in the Forest of Troncais, France, a 114-ft. oak, naturally regenerated about the time of Louis 14th of France. This honor has never before been accorded anyone not a French citizen, and the ceremony of reservation of the Stebbing Oak, performed by the French Conservator of Waters and Forests, was witnessed by officials of the Department of Waters and Forests, the mayor and officials and residents of the town of St. Bonnet, and by the senior forestry class of the University of Edinburgh.

Professor Stebbing will retire from the Chair of Forestry at the University of Edinburgh in September. Since 1921 he has conducted the intensive forestry course in the French forests that is required of forestry seniors of the University of Edinburgh during one of the last months of their training. He flew from Edinburgh to Washington last December for the 50th annual meeting of the Society of American Foresters, and was one of the guests of honor at the annual banquet.

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Tree Improvement Group Meets, Plans, Elects

Development of better forest trees through genetics was the subject of the Committee on Southern Forest Tree Improvement meeting in Atlanta, Ga. on June 21. Making up the committee were representatives of state, federal, and industrial forestry groups and forestry schools throughout the South.

This committee resulted from a South-wide Forest Genetics Conference in January. The purpose of the committee is to assist in the coordinating of forest tree improvement work throughout the South, and to act as a clearing house for information.

At the organization meeting, Carl Ostrom from the Southeastern Forest Experiment Station, Asheville, N. C., was elected chairman. Thurman Bercaw of Gaylord Container Corporation, Bogalusa, La., was elected secretary.

Action at the meeting included plans for preparing guides for those concerned with tree improvement research, seed collecting, and tree planting.

The work of the committee will be accomplished through sub-committees on tree seed, tree breeding, varieties for local plantings, and research methods. These sub-groups will gather and release information on tree genetics work in the South and will suggest future research needs to cooperators.

The program in tree breeding and improvement in the South was stimulated by the tremendous increase in tree planting. Over two hundred million pine seedlings are now being planted annually. Interest in the program also arose from the need for improving the quality of forest stands.

Lumber Short Courses

Thirty-three lumbermen and foresters from six states completed short courses given in June in sawmill operation and hardwood lumber grading at the School of Forestry, North Carolina State College.

The courses emphasized practical instruction and experience in grading lumber, followed by detailed pointers on sawmill operation designed to obtain the highest grades and quality lumber from lumber manufacturing plants.

Statements made by the lumbermen to Prof. Roy M. Carter, in charge of wood technology programs in the School of Forestry complemented the school on this service to industry and indicated considerable pleasure and surprise at the amount of valuable practical information they received.

The main instruction in hardwood lumber grading was given by L. A. Parker, inspector for the National Hardwood Lumber Association. He was assisted by W. A. Smith of Walton Lumber Co., Mebane, N. C., Prof. Lenthall Wyman of the School of Forestry and Roy M. Carter, under whose direction the course was given.

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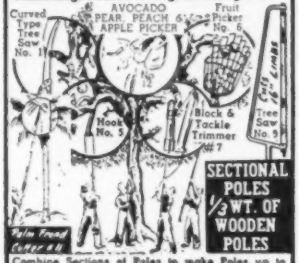
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Rinehart Replaces Guthrie, Illinois Central Forester

Donald E. Rinehart of Marion, Ind. has been appointed forestry agent for the Illinois Central Railroad to fill the vacancy left by John G. Guthrie, who resigned recently to accept the position of chief forester for the Dantzler Lumber Company of Wiggins, Miss.

DONALD E. RINEHART

Mr. Rinehart was born in Marion, and completed his high school education there. He enlisted in the U. S. Navy and saw destroyer service in the North Atlantic. Upon return from military service, he enrolled at Purdue University, obtaining a B.S. degree in forestry this past year.

Illinois Central forestry agents are engaged by the railroad to promote better forestry management of the timberlands along their lines, thus increasing the incomes and general prosperity of farmers and lumbermen throughout their southern territory.

Mr. Rinehart will be headquartered at Hattiesburg Miss.

Michigan Teachers at Conservation School

Over 100 Michigan teachers and school administrators returned to school this summer as winners of conservation scholarships awarded by the Michigan Federated Garden Clubs. Some 80 clubs are paying expenses of the winners who are selected on recommendation of local school officials to attend the fifth annual conservation school at Higgins Lake, Mich.

One group of award winners attended June 10-16, another June 24-30, and the final group will meet August 19-25. Specialists on natural resources, including game, fish, forestry, geology, and land will lead study sessions and field trips.

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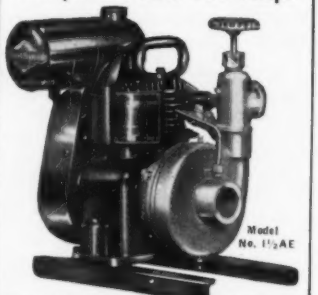

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Left to right, Dr. Wilson Compton, Mrs. C. H. Clemons, and J. Philip Weyerhaeuser, Jr., with bronze plaque presented by American Forest Products Industries, Inc., on celebration of the tenth anniversary of tree farm movement at Montesano, Wash. The plaque is now permanently placed on Grays Harbor County courthouse. Mrs. Clemons is the widow of the pioneer logger who led the wilderness log harvest on land that is now Clemons Tree Farm, first of the 3,032 certified tree farms in 29 states. Dr. Compton was a national leader of tree farms extension in 1941-44. Mr. Weyerhaeuser is president of the Weyerhaeuser Timber Company, owner of 155,000 acres of Clemons Tree Farm.

Marquis Named Director Northeastern Station

Dr. Ralph W. Marquis, assistant chief of the Division of Forest Economics in the Washington office of the U. S. Forest Service, has been appointed director of the Northeastern Forest Experiment Station at Upper Darby, Pa. He succeeds Dr. Verne L. Harper, who has been named assistant chief of the Forest Service in charge of research.

Dr. Marquis came to the Washington office of the Forest Service in 1940 to participate in a nationwide survey of forest resources. From 1931 to 1939, he had taught economics at the University of Rochester.

During World War II Dr. Marquis served with the Research Products and Supplies Division of the Forest Service and worked for nearly a year as chief of the Information and Inquiries Section of the lumber division of the War Production Board.

In October 1945 he was transferred to the Pacific Northwest Forest Experiment Station to undertake a cooperative study with the Bonneville Power Administration of power requirements for forest industries in the Columbia Basin. In October 1947 he returned to the Washington office, where he has concentrated chiefly on forest finance problems.

Short Course in Statistical Quality Control

A five-day short course in statistical quality control as applied to wood products manufacture will be conducted in the School of Forestry at North Carolina State College, September 10-14.

The course is designed primarily for executives, production managers, engineers, superintendents, quality control managers, chiefs of inspection for wood industries, and others with similar interests.

Dr. James S. Bethel, director of the college's Wood Products Laboratory, said the principal objective is to explain the techniques of statistical quality control and to indicate how they may be applied to the various wood manufacturing and fabrication processes.

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New Fellowships Given For Wildlife Research

Two new fellowships to advance wildlife research have been announced by Dr. Joseph S. Illick, dean of State University College of Forestry, at Syracuse. Fellowships are made possible by an endowment given by Anna and Archer Huntington of New York City.

Mr. and Mrs. Huntington also donated the College's 15,000-acre Huntington Wildlife Forest, where the research will be done.

The first fellowships, for $1200 each, have been awarded to Robert M. Wilson of Milton, N. H., and Earl F. Patric of Ellington, Conn. Both are graduate students in the college's Department of Forest Zoology.

Patric and Wilson will assist Dr. William L. Webb, in charge of wildlife research at Huntington Forest. Dr. Webb's research program includes the preparation of plans to manage deer on the forest and detailed study of the biology of the lakes on the forest.

The fellowship awards also will enable Patric and Wilson to do independent research for their Master of Science degrees. Previous studies of Huntington beaver will be continued by Patric, who will determine the number of individual beavers in the estimated 25 colonies living on the forest, the amount of food available for each animal, and methods for harvesting the surplus number to maintain a large and healthy beaver population.

Wilson will study the habits and life history of racoon and the factors which influence the racoon population on the Huntington forest.

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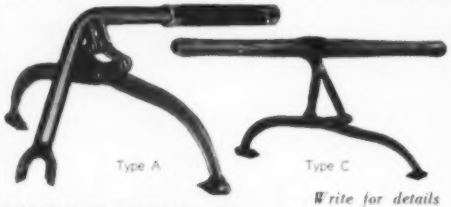

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Meyer Named Director Vermont Forest Foundation

The Vermont Forest and Farmland Foundation, Inc., has appointed William H. Meyer, formerly of the U. S. Soil Conservation Service, executive director.

Mr. Meyer is a graduate of Pennsylvania State College, where he received his B. S. degree in forestry in 1936. He is a native of Philadelphia and has served with the State of Maryland, the U. S. Forest Service in Wisconsin, and the Soil Conservation Service in New Jersey.

In 1941 he became assistant forester, Soil Conservation Service, at Poultney, Vt. becoming assistant soil conservationist there two years later. In 1947 he helped start the Bennington County Soil Conservation District.

The Vermont Forest and Farmland Foundation, Inc., was incorporated last year to demonstrate various methods of land conservation and development and to engage in reforestation projects. Experiments designed to contribute to better and more profitable management of farms and small forests will gradually be initiated.

North Carolina Extension Accomplishments

In 1950, farm forestry extension personnel in North Carolina assisted county agents and, through them, other agricultural workers in holding 863 field demonstrations and 635 tours and general meetings devoted to farm forestry. These were attended by 56,543 farmers, 4-H Club members, F. F. A. boys, and others.

County agents were assisted in establishing 671 new result demonstrations in forestry practices.

Farm forestry extension personnel visited 1,300 individual farms to give advice and assistance, and visited 180 timber operators and industries for market information which was passed on to county agents and farmers.

Forest planting was strongly emphasized in all program activities. As a result, 3,185 farmers, 4-H and F. F. A. Club members, and others planted a total of 7,323,900 tree seedlings — a 158 percent increase over 1950.

County extension personnel held 358 field forestry demonstrations and 358 indoor meetings. In 15 counties extension personnel assisted in planning and conducting contests for 4-H Club members and other farm youth. They served as forestry instructors at summer camps attended by 4-H Club members from 70 counties.

4-H Club members completed 1,638 forestry projects during the year, a 55 percent increase over 1949. A total of 958 club members located in 75 counties planted 1,188,725 free tree seedlings made available by two North Carolina paper mills and the Tennessee Valley Authority—a 190 percent increase over the number of club members planting in 1949. Number of seedlings planted by club members increased 184 percent.

In the last two years, 65 local pulpwood cash markets have been established in 44 counties. Field meetings have been held in nearly all these counties to encourage and show farmers how to take advantage of this new marketing system.

Farm forestry extension personnel, for the first time, assisted agents in holding meetings to demonstrate on-the-farm methods of preservative treatment of fence posts. Interest in treating is very strong, and 16 community-size treating plants are now in operation.

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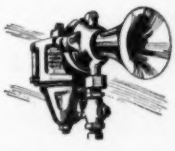

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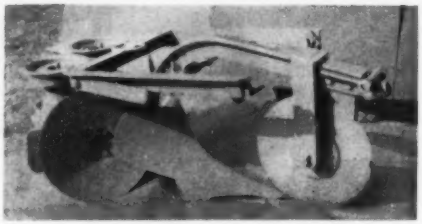

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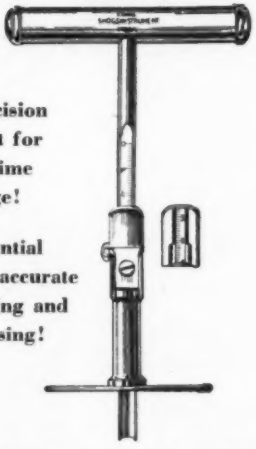

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Squires Heads Forestry At Mississippi Products, Inc.

Mississippi Products, Inc., of Jackson, Miss. has announced the appointment of John W. Squires, to head its expanded forestry department.

Mississippi Products manufactures television, radio, and combination radio-television-phonograph cabinets, and sewing machine cabinets.

JOHN W. SQUIRES

Squires had been associated with the U. S. Forest Service for twenty years and was supervisor of the Mississippi National Forests at the time of his resignation in April.

Squires is a member of the board of directors of the Mississippi Forestry Association, chairman of the State Agricultural Workers Co-ordinating Council, and past chairman of the Gulf States Section of the Society of American Foresters.

In setting up the Mississippi Products Department of Forestry, Squires will be assisted by John Richard Allen, who has been a log buyer at the cabinet plant since 1946.

Donald E. Jamison is another forester with the company.

Products Research Society Announces 1951 Meeting

The sixth annual meeting of the Forest Products Research Society will be held in Milwaukee, Wis., June 23, 24, and 25, 1952.

Frank J. Rovsek, executive secretary, anticipates an attendance of more than 1,000 persons for the meeting.

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New AFPI Periodical For Tree Farmers

Owners of America's more than 3,100 certified Tree Farms now receive *The American Tree Farmer*, a 16-page, two-color periodical published by American Forest Products Industries.

"The publication is a clearing house for ideas of interest and value to people engaged in the management of forest lands everywhere," states James C. McClellan, chief forester for the industry-sponsored organization.

The first issue of the *American Tree Farmer* is sectionalized with special pages devoted to farm forestry in the South, the Western Pine region, the Redwood region, the West Coast region, the Northeast, and the Central and Lake States.

Copies of the publications will go to tree farmers in 29 states who, together, own more than 23,000,000 acres of crop-producing forest land.

New Drying Schedules Improve Hickory Seasoning

New kiln schedules for drying hickory lumber, which may make more practical the use of lower grades have been issued by the U. S. Forest Products Laboratory at Madison, Wis.

The schedules were developed as a result of research on new uses for hickory, particularly for lower-quality wood, and improved methods of manufacturing hickory tool handles, implement stock, and other products.

The schedules and corresponding drying charts were obtained with forest-grown pignut, mockernut, sand, and shagbark hickory from South Carolina and Kentucky. It is believed that they can be used generally for all kinds of hickory lumber.

Copies may be obtained by writing to the U. S. Forest Products Laboratory, Madison 5, Wis., for Report No. R1794, *The Seasoning of Hickory Lumber.*

Conservationists for Tomorrow

A bumper crop of budding conservationists were produced during two months of three-day high school workshops at Trees for Tomorrow Camp in Eagle River, Wis. The 1951 spring sessions for Wisconsin high school students closed on June 2, and the camp swung into adult conservation activities.

More than 650 pupils, boys and girls, from 55 high schools throughout Wisconsin attended the conservation workshops on school time this season.

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Positions Wanted

Forestry graduate, 33 years old, married; 9 years in woodland management, timber sales, and administration; experience in sawmilling and logging operations; 4 years research in thinning young pine plantations and natural stands for post and pulpwood. Best of references.
Box V, Journal of Forestry, Mills Building, Washington, D. C.

Graduate forester, 25, B.S.F., desires permanent position with forest-owning or wood utilizing firm in the Northeast. Interest in research or technology. Has good technical background. Detailed information on request.
Box W, Journal of Forestry, Mills Building, Washington 6, D. C.

Forester, Penn State graduate, age 28, married, 2 children, desires permanent position in forest management or utilization fields. Seven years' experience U. S. Soil Conservation Service, farm forestry, management, portable sawmill, chain saw, and wood chipper, planting, and soil conservation practices. Member SAF. References and detailed information on request.
Robert A. Schrack, 1704 Main St., W. Warwick, R. I.

Forester, B.S.F. 1948, 31 years old, single, desires permanent position with company progressive in timber management. Three years experience in managment of southern pine. References and details upon request.
Box B, JOURNAL OF FORESTRY, Mills Building, Washington 6, D. C.

Forester with thirty years' experience, largely in the Southeast, with federal, state, and commercial organizations. Hardwood and pine management, land acquisition, forest economics, and watershed management. Desires position as manager of forest lands, but qualified for research in silviculture, economics, management, and influences. Detailed information on request.
Box A, Journal of Forestry, Mills Building, Washington 6, D. C.

Forestry graduate, BSF in general forestry, MSF with major in wood utilization and minor in economics, experience in West Africa in charge of purchasing organization buying mahogany and secondary species. World War II veteran, age 27, married with one child, desires permanent position with a future in an industrial or state forestry organization which will combine field work and administrative duties. References and detailed information upon request.
Box C, Journal of Forestry, Mills Building, Washington 6, D. C.

When writing to advertisers please mention that you saw it in the JOURNAL OF FORESTRY.

Maki Heads Research, North Carolina State College

Dr. T. Ewald Maki has been appointed head of the research program and curriculum in forest management in the School of Forestry, North Carolina State College.

Dr. Maki, now the officer in charge of the Gulfport, Miss., branch of the Southern Forest Experiment Station, will succeed Dr. C. M. Kaufman, who resigned the position at North Carolina State College to become director of the School of Forestry at the University of Florida, Gainesville.

A native of Minnesota, Dr. Maki was educated at the University of Minnesota, where he earned his B. S. degree in 1929, his M. S. degree in 1931, and his Ph.D. degree in forest soils in 1950. He also studied at Hibbing Junior College.

The 44-year-old educator has conducted a wide range of research projects, including such fields as forest geneties, forest influences, seeding and planting, grazing, and tree physiology.

He is the author or co-author of more than 18 technical papers relating to the field of forestry. His writings have been published in professional journals, scientific publications, and other periodicals.

Georgia Keep Green Contest

A Keep Georgia Green contest, featuring a cash prize of $1,000, has been announced by the Georgia Forestry Association.

B. M. Lufburrow, executive secretary of the association, said the contest is designed to reduce the number of woods fires in Georgia, reduce the acreage burned, and to "stimulate the interest and active support of every citizen."

The 85 counties cooperating with the fire control system of the Georgia Forestry Commission for one or more years will be eligible to participate. This limitation was necessary because satisfactory records for determining the reduction of fires and acreage burned are available only from records kept by the commission.

The cash award will be presented to the county showing the greatest progress in fire prevention and suppression during the next nine months. The winning county must agree to use the $1,000 prize for a project of county-wide benefit.

Ed Stout, district manager for American Forest Products Industries, Inc., national sponsor of the Keep Green movement, initially presented the contest idea and assisted with formulating the general plans.

Research Grant for Polyporaceae Study

A grant of $300 has been awarded by the Society of the Sigma Xi to Dr. Josiah L. Lowe for assistance in his research on the distribution and taxonomy of southern and tropical polypores. Dr. Lowe is associate professor of forest botany at State University College of Forestry, Syracuse, N. Y. The grant is the second one which the Syracuse scientist has received from the society, an organization for the encouragement of scientific research.

Dr. Lowe's current investigation may take him to southern United States and Mexico this summer. He is engaged in studies of fungi of the south and Tropical America, in a new phase of work on the polyporaceae of North America.

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